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ORIGINAL ARTICLES.

ABDOMINAL SECTION FOR TRAUMATISM, WITH TABLES OF TWO HUNDRED AND THIRTY-FOUR CASES.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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The term "abdominal section for traumatism" is meant to include all cases where the surgeon as a primary measure deliberately opens the abdomen or enlarges an already existent wound for the purpose of searching for intra peritoneal lesions, and, if they are proved to exist, of repairing them as far as possible, but in any case to cleanse the cavity and render it aseptic.

In January, 1887, under the above heading, I presented to the Philadelphia County Medical Society, tables of fifty-seven cases and comments thereupon, as well as a number of unpublished case histories. In that paper, which was the first collective résumé of the subject, I arrived at conclusions which I am willing to again offer now as substantiated by the much larger knowledge set forth in the present tables.

Shortly after the appearance of that first series of tables I was glad to grant the request of Sir William MacCormac that he might republish them as an appendix to his oration upon "Abdominal Section for the Treatment of Intra-peritoneal Injury" before the Medical Society of London. Since the appearance of that monograph tables of gunshot wounds have been published by Baker, Dalton, and Coley; also one of ruptured bladder by Grant. To each of these authors I am indebted for one or more valuable references, also to Dr. John Ashurst, Jr., for a number of references and for several corrections in the present tables; and to each of those gentlemen whose cases in the tables are marked "unreported," for the privilege of publishing them. But to the conductors of the *Index Medicus* I am most indebted, for without the aid of that periodical the construction of such statistics would verge upon the impossible.

The field bounded by my title and definition having been thoroughly tilled in the previous paper will not again be gone over systematically; merely an old point here and there will be emphasized or a new one introduced. As before, a number of cases of section for traumatism have been excluded where interference was delayed until after the lapse of many days or even weeks or months. These can properly be kept out of a tabulation of primary operations and should be classed, as suggested by Gaston, as "secondary section for traumatism."

The statistics presented in this communication are not contrastable with those of the first paper because in the new totals are included very many fatal cases which had been operated upon prior to January, 1887, but which up to that time had not been published. Encouraged by seeing other fatal cases reported many operators have since put upon record fatal cases previously treated, so that while almost none but successful cases had up to that time been recorded, now almost all have been published. It is extremely gratifying however, to note the steady decrease of mortality attendant upon this modern procedure, and the more so because the recovery percentages of the present tables have had to contend with a flood of fatalities which properly belong to the earlier statistics. Also is it most satisfactory to find after the lapse of but little over two years that the very last opponents to section for traumatism—then so numerous—have long since been silenced or converted by the eloquent teachings of accumulated experience, knowledge, and result.

The total number of cases of abdominal section for injuries of all classes resulting from traumata which I have been able to collect up to date is 234. Of these 96 recovered and 138 died, a general mortality of 58.97 per cent. Of this total, 110, or 47 per cent., were gunshot wounds; 79, or 33 per cent., were stab wounds; 27, or 11 per cent., were ruptured bladders; and 18, or 7 per cent., were cases of ruptured or contused intestines.

Ninety-seven American surgeons operated upon 165 cases with 62 recoveries and 105 deaths, a mortality of 65.45 per cent; while 64 foreign surgeons operated upon 69 cases with 34 recoveries and 33 deaths—a mortality of 47.82 per cent.

By cities, operations were performed in: Philadelphia 32, New York 25, St. Louis 22, London 22, and in Chicago 13.

The causes of death as indicated by the tables form an array which is shameful to modern surgery and one which we may expect to see entirely reversed and changed for the better ere the time comes for again revising the statistics.

Death succeeded operation from causes as follow:—shock and prolonged operation, 8; peritonitis from delayed operation, 36; peritonitis developing subsequent to operation, 16; peritonitis from overlooked wounds, 11; peritonitis following extravasation from poorly sutured wounds, 4; ditto from wounds which it was impossible to suture, 2; toxæmia from absorption of urine from the peritoneum because of delayed operation after bladder rupture, 7; opium poisoning, 2; cholæmia from obstructed hepatic duct, 2; gangrene of bowel, pericarditis, cerebral embolism, and delirium tremens, each 1; not stated, 16. In 4 other cases overlooked wounds were found post mortem but the patient had perished of other causes before peritonitis could develop.

Three cases died upon the table: 2 from hæmorrhage; 1 from shock and prolonged operation. Ten cases died immediately upon removal from the table, and 40 within 12 hours. Very many of the cases were upon the table a very long period of time and it is to be sincerely hoped that a more general introduction of modern time—hence life—saving methods of dealing with intestinal lesions will do much to ameliorate the death-rate of these cases.

In eighteen instances penetration of the peritoneal cavity was proved, the abdomen opened, and no intra-peritoneal injuries found. All of these recovered save two, one of which died of accidental opium poisoning, the other, of causes not stated, in thirty-six hours. In my opinion all of these cases were far better off opened and cleansed than if they had been let alone with the possibility of subsequent septic inflammation or of unsuspected visceral wounds. Apropos of this very point is a case in the tables where it was concluded that because the hydrogen insufflation test gave negative results that there could be no justification of opening the abdomen. Violent peritonitis speedily developed, and the abdomen was then opened; no wounds were found but a violent general purulent peritonitis was present and from it the patient subsequently died.

Many symptoms of intra-abdominal injury have in the past few years been proved entirely fallacious and unreliable. Thus, in the tables are recorded many cases where with most intense shock either no injury existed or only those of most trivial description were found, whilst on the other hand, patients walked great distances and remained for hours without the least sign of shock when multiple perforations of the intestines and other terrible injuries had been inflicted. Nor should much reliance be put upon the apparent direction of a bullet, for it is a notorious fact that the abdominal parietes will most readily divert balls from their tracks and occasionally deceive the very elect. Neither should a surgeon be content simply to lay open a ball track that has partially traversed the abdominal cavity, and repair only such injuries as he may find immediately beneath, for the great probability is that injured intestines may, by peristaltic or other force have been drawn to parts of the abdominal cavity most remote from the seat of the injury. In the tables several good instances of this fact are also to be found. Likewise emphysema of the wound surroundings may be a worthless sign. Several times it has been present when the intestines have not been perforated. Disappearance of the usual liver percussion dulness has also frequently been noted when the intestines were simply distended and no perforation existed.

Even my profound respect for Dr. Senn and his contributions to surgical science cannot make me an enthusiast for his hydrogen insufflation test for perforations of the intestinal canal. With me it would be an exceedingly exceptional case in which its assistance would be requisite to determine whether to open the abdomen or not. The tables show that the test has been applied for this purpose eleven times. In eight instances it proved perforations to be present, and in two their absence. Of the latter, one died of septic peritonitis; which death most probably could have been avoided had the abdomen been opened and cleansed upon the simple indication of penetration of the peritoneum. In one Philadelphia case, in the hands of Dr. O. H. Allis, the test was applied thoroughly and failed to demonstrate intestinal perforation. Signs of violent intra-peritoneal hæmorrhage being present however, the abdomen was opened and two perforations of intestine as well as a great amount of free blood were discovered. This patient died upon the table from terrific hæmorrhage originating in an half inch wound across the root of the mesentery. I can see but a most narrow field for the insufflation test in intestinal injuries for, of course, it will at most demonstrate nothing but perforations and will lead the operator, if he trusts to it, to overlook multiform other lesions which are often just as dangerous as perforations themselves. The test will in most cases prove *perforations* but will not invariably do even this, as is instanced above. Many conditions such as impacted fæces, prolapse of mucous membrane and recent adhesions are liable to interfere with its proper efficacy and offer a misleading, perhaps ultimately fatal result to those who rely implicity upon it. Neither can I concede it to be, *per se*, a harmless test, for its application must often occasion extravasation of fæces when that complication may

not already have taken place, or rupture of the bowel might be produced, and further the time lost and additional shock produced by its application are all elements to be considered before the test is put into routine use.

The indications for section for traumatism are few but comprehensive. In most cases they resolve into a single one—*proof of the fact of peritoneal penetration*. More difficult to propound but none the less important are the contra-indications thereto. It would be better not to interfere whilst profound shock lasts unless it depends upon such condition as continuing hæmorrhage; in which case it would be the surgeon's duty to interfere even if the patient be *in extremis*, for the surgeon of the near future who is to do many of these operations will not be able to boast, even early in his career, that he has not lost a patient upon the table, because that most distressing occurrence will occasionally be inevitable if we do our whole duty by such desperate cases as are these.

Where portions of one or more viscera have become prolapsed through the wound no contra-indication to section and thorough search for other lesions is presented because it is never by any means certain that the prolapsed portions were the only ones liable to injury by proximity to the entrance wound, for they may not have become prolapsed until long after the original injury, and from an entirely different portion of the abdomen. If the physician in attendance is quite ignorant of abdominal surgery, or if the surroundings of the patient are exceedingly bad, delay and awaiting symptoms of peritonitis may occasionally be pardonable, but under circumstances in the very least degree favorable and often when most unfavorable, the time for operation should ever be at the earliest possible moment after injury. No statement in this paper is better justified by a study of the table facts than is this latter.

Median incision is also universally commended as best, and many fatal cases are directly attributable to neglect of the overwhelming evidence accumulated in support of the rule. So also of the oft repeated caution to be systematic and thorough in the search for lesions, for it is impossible to find all lesions which may be present unless this rule is rigidly adhered to. Exceptions to it of course exist, as in case of violent hæmorrhage to which attention would always first be directed but, no matter what are the circumstances, at some time before it is closed the abdomen should be gone over systematically in all cases where there is the most remote possibility of lesions being present.

Another point of value in these cases of abdominal injury is to wash out the stomach in order that its contents may not induce vomiting after operation, or, by passing into the alimentary canal, cause interference with the process of wound repair. This should be accomplished before the induction of anæsthesia unless the patient has already vomited freely, when it may be omitted.

Excision of the intestine was performed seventeen times in fifteen cases by the old method; of these two recovered and thirteen died. Undoubtedly the more general knowledge and application of Senn's methods of intestinal resection and anastomosis will soon exactly reverse these figures, and also by their application to many such conditions as undue narrowing of the bowel lumen after suturing wounds, these same procedures will save still other lives in which heretofore we would rather have risked stenosis than the almost invariably fatal operation of intestinal resection. Anastomosis will usually be preferable to excision because we can often utilize a perforation for one approximation opening or even draw together two enlarged perforations, thus not only saving the time of an old fashioned excision but also that of suturing the utilized perforations. The variety of ways and in what combinations the Senn methods can be adopted are almost unlimited to one having a thorough knowledge of their application. Senn's method of supporting repaired wounds with omental flaps will also find wide application in this field. One instance is reported in the table where the surgeon sewed into a very large wound of the stomach (which could not be approximated without producing severe stenosis) a large graft of mesentery, which clever suggestion opens up a new mine of resources for certain destructive intestinal wounds. The graft, however should always be taken from the omentum and not from the mesentery as reported.

Thrice abdominal nephrectomy was performed and but one case recovered. Twice the spleen was removed and both patients died. Once the gall-bladder was excised—for rupture—and the patient died of cholæmia produced by an overlooked stone which had been driven from the bladder into the hepatic duct at the time of injury. The ureter was cut through by a ball in one instance but the injury was not recognized at the time of operation and the patient subsequently died because of it. In several cases death was due to wounds of the rectum situated so deeply in the pelvis as to render suture of them impossible and the patients died of peritonitis. No really efficient method has yet been devised for treating such injuries, but distension of the rectum by the rubber bags which are sold for the purpose, would undoubtedly bring certain of these wounds into sufficiently easy reach. In two cases the diaphragm was wounded by the vulnerating body gaining access to the abdomen *via* the thoracic cavity. In each instance a hernia of viscera into the thorax existing at the time of operation was reduced, the diaphragmatic wound sutured with catgut, and perfect recovery ensued,

After the search for lesions and their possible discovery and repair it is of extreme importance to thoroughly irrigate or wash out the whole cavity with hot water both as a cleansing agent and as the best method of treating the shock which is almost always present in greater or less degree at this stage of the operation. And just as important, yes more so, is drainage; these two measures are the great life savers in abdominal surgery and it is a matter of great congratulation that they are coming into almost universal use in those cases where there is any indication for their employment. One can never go wrong in employing either irrigation or drainage; which is vastly more than can be said in favor of the omission of one or the other or both. Drainage should invariably be used where there have been signs of peritonitis present, extravasation of fæces or food, or where the operation has been undertaken late. It may be omitted in certain rare instances where there have been no signs of peritonitis, no extravasation, and no wounds of intestine. Drainage is a point ever difficult to decide against and it is always better when in even the slightest doubt to put in the drain. For this purpose nothing equals the glass drains of Keith, kept in proper working order by an absorbent wick of cotton as suggested originally by Mr. Greig Smith.

As many sections for injury are not undertaken until some signs of peritonitis are present, operators should keep in mind the resource of making ½ inch incisions into the periphery of the intestines for the relief of gaseous or other distension. These wounds should immediately be sutured in exactly the same manner as are those produced by the vulnerating force. By their assistance intestines can always be reduced to the abdominal cavity without undue forcing or handling, and in much better and safer condition than if returned in a distended condition.

In the after-treatment opium in any form should absolutely never be used except to relieve pain—even then most tentatively and with the belief that under any circumstances it is an agent of extreme danger after abdominal operations, and to be dispensed with at the earliest opportunity after the pain for which it has been administered has been relieved by salts or otherwise.

Rectal alimentation is indicated during the first few days after extensive bowel wounds have been repaired.

At the very first sign of oncoming peritonitis active saline or mercurial laxatives are imperatively indicated. If the symptoms are slow of development we may be content with the administration of minute doses of calomel or calomel and podophyllin (⅛ gr. each) every twenty minutes or half hour; but if they burst forth suddenly and are not thought to be due to the giving way of a repaired wound, then our purging should be progressive and powerful. Under these latter circumstances reopening of the wound, irrigation and perhaps the repair of an accident will sometimes be required in conjunction with the administration of the salts.

GUNSHOT WOUNDS.

The tables show a total of 110 cases of section for perforating gunshot wounds by 84 surgeons, with 36 recoveries and 74 deaths—a mortality of 67.27 per cent. Sixty-eight American surgeons operated upon 94 cases with a mortality of 68 per cent., and 16 foreign surgeons operated upon 16 cases with a death-rate of 62 per cent. Four times the abdomen was laid open after penetration of the peritoneum had been proved and no visceral wounds were discovered. All of these recovered. Eight times intestinal perforations were overlooked at the time of operation and subsequently found post-mortem. Thirty-one cases died of peritonitis; 14 of shock and prolonged operation; and 14 of primary and 4 of secondary hæmorrhage. Wounds of the liver are reported in 15 instances: of these 9 died—most of them apparently of hæmorrhage or other complication. Once the liver was extensively sutured, and with success. In 12 cases no special treatment was directed to the liver wound; 5 recovered and 7 died. Twice the wound was packed with gauze, both patients perishing.

The suggestion which first came to me through Dr. Mordecai Price, of this city, to first separately drain wounds of the solid viscera by tubes running through the track of the ball or knife, seems to be a very good one. Several of the recorded cases would certainly have thrived better if they had been so treated.

In 5 cases the kidney was perforated by the ball. For this complication no special treatment was attempted in 2 cases and both promptly died. Three times nephrectomy was performed, the only recovery being that of Dr. M. Price of Philadelphia. In one case the spleen was traversed and was treated by the actual cautery. This case perished from the effects of the violent primary hæmorrhage. Excision of the intestine was done 13 times in 11 cases, but without a single recovery. Twice the bladder was perforated by a ball in conjunction with other visceral lesions. Numerous intestinal perforations were once found complicated by intussusception. One case presented, in addition to several bowel wounds, well-marked tubercular peritonitis, but recovered perfectly not only from his gunshot wounds but also from the peritoneal tuberculosis.

STAB WOUNDS.

Of stab wounds 79 cases are recorded. These were operated upon by 53 surgeons with 48 recoveries and 31 deaths—a mortality of 39.34 per cent. Thirty-seven American surgeons operated upon 61

cases with a mortality of 47 per cent., and 16 foreign operators did 18 sections with a mortality of 11 per cent.

This table will be found to include 3 cases which were gored by animals, and one instance each of injury from the following causes: falling through pane of glass; flying splinter of wood; flying fragment of iron; falling upon circular saw.

The chief causes of death were: peritonitis, 7; overlooked wounds, 5; shock and prolonged operation, 2; primary hæmorrhage, 7; secondary hæmorrhage, 1. Eighteen cases were opened and no peritoneal injuries found. Of these 2 died, 1 from opium poisoning, the other from causes not stated, but presumably an overlooked wound of intestine. Wounds of the liver are mentioned 9 times. In four of these the organ was sutured with catgut and 2 recovered; it was cauterized in one instance and packed with catgut in another, both dying; once it was successfully packed with gauze, and in 2 cases no treatment is mentioned. Once intussusception was found when no visceral injuries were present.

RUPTURE OF URINARY BLADDER.

Twenty-seven cases of operative interference for this injury are reported by 26 operators, yielding in 10 recoveries and 17 deaths, or a mortality of 62.9 per cent. Eight cases were operated upon by American surgeons with a death-rate of 75 per cent., and 19 cases by foreign operators with a mortality of 59 per cent.

The causes of death were: Uræmia from absorption of urinary products remaining long before the operation in the peritoneal cavity, 7; inefficient suturing of bladder wound, 2; impossible suture ditto, 2; peritonitis subsequent to operation, 4; secondary hæmorrhage from perineal wound, 1.

The average time of undertaking operation after receipt of injury is mentioned in 24 cases and is the same number of hours. Taking this fact in conjunction with the mentioned causes of death we observe that if these cases were operated upon early, and in a proper way, there would be a resultant death-rate of scarcely more than *nil*.

Of the special symptoms of ruptured bladder a few words should be said. The recorded cases prove that there is great need of more reliable signs of rupture of the organ than have hitherto been possessed. By actual experience it has been proved that untinged urine is not a positive sign that no rupture is present. So also with injection of the viscus with fluid. The withdrawal of many pints of clear or bloody urine, on the other hand, has proved a sign of infallible nature when present—which only too often it is not. Some time since, in an editorial upon the subject in hand (*Medical News*, October 6, 1888), I suggested the gentle introduction of hydrogen gas into the bladder as a test of its continuity or rupture, and cited a number of experiments which were made upon the cadaver to ascertain its effectiveness. These experiments, so far as the cadaver was concerned, were highly satisfactory, but no chance has yet occurred to myself or others to put it to trial upon the living body. The method of experimentation was to introduce a catheter into the intact bladder and then to gently distend it with the gas under moderate pressure. The organ would at once rise into the abdomen and make itself apparent by tumefaction and unwonted percussion resonance just above the pubes, but the percussion resonance of the remaining portions of the abdomen would continue normal. If now the point of the catheter was made to perforate the bladder wall at any point, the gas at once escaped into and distended the whole abdominal cavity, producing universal tympany and absence of the before present liver dulness. It is further possible that this test might prove extraperitoneal ruptures by giving rise to emphysema of the surrounding cellular tissue, but of this I have not had sufficient evidence to speak with precision.

RUPTURE AND CONTUSION OF ABDOMINAL VISCERA.

Of these injuries 18 cases are tabulated, and of them 2 recovered and 16 died—a mortality of 88.8 per cent. These include: rupture of intestine, 11 cases; contusion and ecchymosis of viscera, 3 cases; rupture of gall bladder, 1 case; rupture of liver, 1 case; and rupture of spleen, 2 cases. The time of operation after injury is mentioned in 12 cases and averages forty-eight hours. The causes of death were: Peritonitis from delay, 10 cases; hæmorrhage, 3; overlooked wounds, 2; impacted gall stone, 1 case. One case which is marked "recovered" was a rupture of intestine operated upon very shortly after its occurrence by Mr. Croft, of London. The patient recovered perfectly with an artificial anus, but died almost immediately upon conclusion of the operation for its relief a month afterwards. The only ultimately successful case was one where simply contusions of the viscera were found when the abdomen was opened, but which had presented all the conventional signs of intestinal rupture before exploration. Twice resection of the bowel was performed as a primary measure and both resulted fatally. Twice also artificial ani were made and one recovered but, as mentioned above, only to miserably perish from the subsequent operation for its closure. In the case of ruptured gall bladder that viscus was dissected out after ligation of the cystic duct, but the patient shortly afterwards dying of cholæmia, it was found, post-mortem, that at the time of rupture a large calculus had been forced into the hepatic duct, totally obstructing it and causing death. Twice the spleen was excised and in each instance was followed by speedy death due to the effects of the frightful primary hæmorrhage.

TABLE I.—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	A. R. Kinloch, No. Car. Med. Jour., 1882, x, 1.	Adult	11 hours	Slight shock; general abdom'l pain; pain in sacral region; hole in rectum.	Much blood and fæces; 5 perforations of intestine, 2 of mesentery; rectal wound could not be found	Trimmed, and sutured with Lembert's stitch; drain.	Died in 16 hrs.	Post-mortem: another intest. wound found.
2	Kocher, Corresp. für Aertze, 1883, No. 23.	14	3 hours	Collapse; signs of peritonitis.	Much blood; wound of large curvature and fundus of stomach 1½ inch.	Sutured	Recovered.	
3	Jordan Lloyd, Brit. Med. Jour., 1883, i, 560.	19 F.	48 hours	Little shock; no vomiting; later constant vomiting and peritonitis.	Much stinking brown fluid; ragged wound of small intestine ¾ in. in diam.	Intestine stitched to abdominal wound.	Died in ½ hr.	Post-mortem: mesentery perforated; contusion of bladder.
4	W. Watkins Seymour, N. Y. Med. Jour., 1886, xliv, 209.	15	13 hours	No shock at any time, vomited; some pain down left sciatic nerve.	Acute peritonitis; 3 lines of colon destroy'd; 2 wounds of meso-colon; thickened duodenum.	All approximated with Lembert sutures.	Died in 21 hrs.	Post-mortem: wounds in good condition; no others found.
5	C. A. Jersey, Med. Record, Oct. 16, 1886.	44	20 hours	Much shocked; pain and tenderness of abdomen.	4 wounds of sm. intestine; 2 perforations of mesentery; abrasion of mesen'y	All w'nds, except the abrasion, stitched with Lembert sut.	Died in 19 hrs.	Post-mortem; mesenteric wounds; sloughing, and bathed with pus.
6	T. Annandale, Lancet, 1885, i, 740.	15	1 hour	General shock; slight pain in abdomen and pelvis.	Considerable blood; 5 w'ds. of small int., 2 in colon, 2 in rectum; wound of mesentery.	All closed with Lembert sutures.	Died in 24 hrs.	Walked 100 yards after injury; post-mort.; wounds firm; no others found.
7	F. S. Dennis, Med. News, '86, xlviii, 225-253.	23	. . .	Great shock.	Much blood; wound of liver and its great vessels.	None; abdomen rapidly closed.	Died in 48 hrs.	
8	F. S. Dennis. Ibid.	26 F.	. . .		Much blood; 7 wounds of intestine, 1 of mesentery; uncontrollable hæmorrhage from iliac veins.	Wounds sutured . .	Died in 48 hrs.	Post-mortem: abdominal cavity filled with blood.
9	A. V. Park, Chicago Med. Journ. and Ex., 1885, ii, 412.	16	22 hours	Abdomen tympanitic; no liver dulness.	Great quantity of blood; ½ inch wound, also groove in small intestine.	Lembert sutures to groove and perforation.	Died in 15 hrs.	Post-mort.. few clots; peritonitis; contused wound of rectum.
10	Wm. T. Bull, Med. News, 1885, i, 171.	22	17 hours	Vomiting; pain; tenesmus; involuntary micturition.	5 wounds of small int.; 1 wound of sigmoid flexure.	Lembert sutures to all.	Recovered.	Ball found among intestines.
11	E. & E. W. Andrews, Journ. Am. Med. As., 1885, p. 177.	Adult	. . .	Vomited much blood; diffused tenderness of abdomen.	Considerable bloody serum only.		Recovered.	
12	John B. Hamilton, Jour. Am. Med. As., 1885, ii, 202.	19	. . .		11 wounds of small intestine, 2 of colon; omentum and mesentery wounded.	Lembert sut. to int.; wounds ligatured, and removal of injured portion of omentum.	Recovered.	Pelvic suppuration; hæmatocele evacuated through rectum on twelfth day.
13	T. G. Richardson, N. O. Med. and Surg. Jour., 1886, xiii, 867.	Adult	9 hours	Great shock; vomiting; signs of incipient peritonitis.	3 tears of intestine, 1 of mesentery.	All sutured	Died in 14 hrs.	
14	A. C. L. Ramsay. North western Lancet, '85, iv, 377.	7	6 hours	Great pain; much vomiting.	Much blood; extensive w'nd of duodenum; contusion of colon.	Excision of gut, including wound; Lembert sutures.	Died in 1 hr.	
15	Wm. T. Bull, Med. News, 1886, xlix, 601.	24	6 hours	Severe abdom'l pain; shock; vomiting; diminished liver dulness; fluid in abdominal cavity.	2 wounds of small intest., 2 of transverse colon; extravasation into meso-colon.	All sutured by Lembert's method.	Died in 8 hrs.	Post-mortem: nothing more than above.
16	Wm. T. Bull, Med. News, 1886, xlix, 524.	57	12½ hours	Shock; vomiting; scarce any pain.	Great amount of blood; left lobe of liver almost divided.	None; abd'n closed.	Died on table.	Post-mortem: no other wounds found.
17	Wm. T. Bull, Med. News, 1886, xlix. 524.	25	2½ hours	Nansea; abdomen appeared normal; only vicinity of wound tender.	2 wounds of small intest.; 3 tears of peritonenm of meso-colon; omentum and anterior epiploic appendages torn and bleeding.	Lembert sutures to intestinal wounds; omentum and appendix excised.	Recovered.	
18	Abbe, Med. News, 1886, xlix, 524.	53	3½ hours	Slight shock; vomiting; rapid and increasing abdominal pain; tympany.	4 wounds of sm. intestine; wound between bladder and rectum. Much subperitoneal extravasation.	All approximated with Lembert's suture.	Died in 9 hrs.	Walked two squares after injury. Post-mort.: purulent peritonitis; ball found in bladder.
19	F. J. Lutz, Weekly Med. Rev., 1886, 514.	21	10 hours	Right side of abdomen tympanitic; left side dull.	7 wounds of sm. intestine; 4 wounds of mesentery.	Lembert's suture; ligature to mesenteric artery.	Died in 3 days.	Post-mortem; purule't peritonitis; wounds in good condition.
20	Mackeller, Lancet, 1887, i, 37.	23	30 hours	Some shock; no evidence of wound of bowel; next day peritonitis.	2 wounds of lower portion of sigmoid flexure.	Wounds could only be ligated.	Died in a few hours.	Post-mortem: no other wounds; bullet between rectum and bladder.
21	C. B. Nancrede, Phila. Acad. of Surg., 1886.	. . .	. . .	At first little pain or shock; later copious bloody vomiting.	Perforation of anterior and posterior walls of stomach; two large perforations of duodenum.	Lembert sutures; "cleansing."	Died in 3 days.	No post-mortem.
22	T. G. Morton, Trans. Phila. Co. Med. Soc., 1887.	36	1½ hours	Some pain; no shock; vomited blood copiously.	4 wounds of stomach, 1 of transverse colon; omentum much lacerated.	Lembert sutures to all.	Died in 6 hrs.	Post-mortem: wounds & abdomen all right; large hæmorrhage (1½ pints) into left pleura from cut intercostal artery.
23	John I. Skelly: Ann. Surgery, 1887, vi, 49.	21	1 hour.	Unbearable abdomin'l pain; wound midway between umbilicus and iliac spine; free bleeding from it.	Entrance and exit wound of peritoneum. Much venous blood in cavity from entrance wound. Well-marked tubercular peritonitis present.	Dusted with iodoform; cavity cleansed.	Recovered.	Ball not found; was imbedded in perispinal tissues.

TABLE I—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem
24	T. A. McGraw, Med. Rec., '87, xxxii, 233.	24 F.	9 hours	Pain in right iliac and lumbar regions and epigastrium	Two perfor. ascending colon, extravasation of fæces.	Wounds united by continuous suture abd. washed out.	Recovered.	
25	A. R. Kinloch, Med. News, '87, ii, 60.	27	2½ hours	Condition good.	Four perforations of ileum, two of jejunum, mesentery torn and perforated in two places; bleeding from mesenteric artery; much free blood in cavity.	All wounds closed by Lembert sutures; abd. cavity cleansed and irrigated, no drain	Died in 48 hrs.	Post-mortem: general peritonitis; half pint sanguinolent fluid in cavity
26	J. H. Packard, Med. News, '87, i, 339.	33	2 hours	Marked collapse; sanguinolent vomit.	Eleven wounds in small intestine; omentum torn and bleeding; wound of extern. iliac vein beneath Poupart's ligam't; much blood in cavity.	Excision of 1 inch of small intes.; Lembert sutures to other wounds; ligat'n of external iliac vein; peritoneum cleansed; rubber drain.	Died in 15 hrs.	Post-mort.: evidences of peritonitis; ball found in contact with shaft of femur.
27	C. Kollock, Med. News, '87, i, 480.	15	6 hours	Deep-seated emphysema about ball w'nd; hepatic resonance; thirst & some shock; bloody stools; fæcal extravasation thro' ball wound.	Two perforations descending colon, one of ilium; bleeding epiploic appendage; much extravasated blood and fæces.	Lembert sutures to wounds; epiploic appendage ligated and cut off; abdomen cleansed.	Recovered.	
28	T. Billroth, Report of Klinik 1886 by R. von Hacker.	63 F.	32 hours	Collapse; vomited blood; belly swollen and tender; wound in seventh intercostal space below nipple.	Two wounds stomach near greater curvature; much clotted blood in cavity.	Transverse incision 6 in. long linea alba to 6th rib; 7th and 8th ribs resected; Lembert sut. to stomach w'nds abdomen cleansed; drain; ball not found.	Died in 30 hrs.	Post-mortem: ball had wounded liver and aorta and lodged in right kidney, peritonitis and pleuritis present; vomiting had kept up continuously.
29	J. M. Gaston, Med. & Surg. Reporter June 12, '86, 739.	30	4 days	Continued extreme shock from time of accident until operation.	No visceral wound; considerable decomposing sero-sanguinolent fluid in cavity.	Seven punctures int. to let out gas; Lembert sutures to each of these; abdomen cleansed; drain.	Died.	Post-mortem; no visceral wound; ball could not be found.
30	Pozzi, Review de Chir., '87, i, 78.	13	8 hours	Vomiting; bloody urine; vesical symptoms most urgent.	Urine in peritoneal cavity; 3 perforations and 3 contusions of intestine; w'nd of bladder.	Partial resection of gut; 29 Lembert sutures to wounds; drainage.	Died in 52 hrs.	
31	W. W. Keen, Med. News, May 14, '87	18 F.	8½ hours	Wound in right hypochondrium, fracturing ninth rib; pale and weak; tenderness of abdom'n; had vomited some clear blood.	Wound of pylorus, 2d w'nd posteriorly; also, tear superior mesenteric vein and extravasation into mesentery; anterior border of liver "scalloped" by ball; 1¼ inch wound small intestine; left kidney lacerated.	Wounds of stomach and int. closed by Lembert sutures; mesenteric vein ligated, also branch mesenteric artery; torn kidney removed; abdomen washed out.	Died in 14 days.	Albuminuria after operation; also vomiting and rigors; abdomen partially reopened 12 days after operation. Post-mortem: all wounds in good condition; gangrene of intest. and mesentery opposite wound of gut, which had healed.
32	Isaac Warren, N. Y. Med. Journal, Sept. 17, '87, 325.	18	24 hours	Tendency to vomit; shock; symptoms of peritonitis.	Five perforations small intestine, 2 of mesentery; general peritonitis well advanced.	Lembert sutures to wounds; abdomen washed out; rubber drain.	Died in 14 hrs.	No post-mortem; time of operation 1½ hrs.; died of peritonitis.
33	C. K. Briddon, Med. News, '87, i, 52.	F.	18 hours	At first shock and vomiting, next day slight tympanites; primary symptoms continued.	Two wounds of stomach, 1 of omentum.	Lembert sutures to wounds; cavity cleansed; gauze packing left in.	Died in 36 hrs.	Post-mortem: general peritonitis; 4 overlooked wounds of jejunum discovered; time of operation, 2 hours.
34	Jos. M. Fox, Med. News, Nov. 12, 1887, 568.	18	3½ hours	Condition fair; slight fulness of abdomen; dull pain in umbilical region.	Four perforations of colon and jejunum; tear of omentum and of mesentery; considerable free blood; no extravasation; recent intussusception of ilium.	Wounds closed by Lembert sutures; belly cleansed; invaginat'n reduced.	Recovered.	Time of operation, 1 hour and 10 minutes.
35	Durante, Tr. Acad. Medicine, Rome, June, 1887.	Adult	. . .	Gunshot wound of abdomen.	One perforation small intestine.	Wound closed by Lembert sutures.	Recovered.	
36	G. S. Brown, Med. News, Feb'y 18, 1888, 180.	32	12 hours	All signs violent peritonitis; condition fair; penetration proved.	Six ozs. bloody serum in cavity; no visceral w'nds, intense peritonitis; ball not found.	Large irrigations; drainage.	Recovered.	Drain removed on 10th day.
37	Richard Douglas, N. Y. Med. Jour., June 9, 1888, 631.	Adult	8 hours	Profound shock; great pain; tympany; vomiting.	Four wounds small intestine, 2 of colon; extravasation of fæces; much free blood	Lembert sutures to wounds; abdomen cleansed; no drain.	Died in 50 hrs.	Died of septic peritonitis, no post-mortem record.
38	Charles T. Parkes, Annals Surgery, Nov., 1887.	Adult	5 hours	Moderate collapse; much vomiting.	Five perforations of intestine; kidney (left) perforated and torn.	Perforations closed; kidney not removed.	Died in 24 hrs.	Died from hæmorrh. from torn kidney.
39	Charles T. Parkes, Annals of Surgery, Nov., 1887.	45	17 hours	Fæcal matter in w'nd; respir-thoracic; belly walls hard and motionless.	Large perforation of small intestine; bullet not located; large quantity of foul ichorous serum.	Closed by continuous suture, free boric irrigation.	Died in 16 hrs.	Died of shock and septic poison.

TABLE 1—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
40	DeForest Willard, Trans. Am. Surg. Ass'n. Sept., '88.	17	4 hours	Moderate shock: later intense shock and signs of hæmorr.; passed by urethra 12 ozs. pure blood; pain in back and left side; whole lumbar and inguinal regions absolutely flat upon percussion.	Immense extra-peritoneal hæmatocele extending upwards to left kidney; kidney centrally traversed and torn; small amount bloody serum in cavity.	Nephrectomy; removal of hæmatocele; thorough irrigat'n.	Died in 68 hrs.	Urine albuminous after operation; peritonitis; incessant vomiting later; no sympt. of uræmia.
41	Sevastopoulo, Bull. et. Mem., de la Soc. de Chir., xiii, 1887, 273.	30	1 hour.	Cold and pale; fæces flowing from wound.	Large oval wound small intestine; quart of blood and clots in cavity.	Resect'n of wounded int. and invagination of ends; cavity irrigated.	Recovered.	
42	W. Bolles, Boston Med. and Surg. Jour., Oct. 18, '88, 377.	F. 34	6 hours	Shock; vomiting.	1 wound stomach, 2 of jejunum, 2 of transverse colon; free blood and traces of fæces.	Wounds closed by suture.	Died in 6 hrs.	Post-mortem; abdm'n and wounds in good condition.
43	Cupples, Daniels' Texas Med. Jr., vii, 10–163.	F. 21	1½ hours	Great hæmorrhage; patient very weak.	4 wounds small intestine; much free blood.	Wounds sutured. . .	Died in 5 hrs.	Never reacted.
44	Roswell Park, Med News, August 4, 1888, 116.	32	6 hours	Severe shock.	2 wounds small intestine; 1 of mesentery; large amount of free blood.	Sutured; irrigation.	Died in 53 hrs.	Rallied well; died of ac. pericarditis; no peritonitis; w'ds healed.
45	N. P. Dandridge, Tran. Am. Surg. Ass'n, 1887, 216.	57	19 hours	Little pain; no distension or vomit at first; later, peritonitis and vomiting; shock.	10 wounds small intestine.	W'nds sutured; cavity irrigated.	Died in 43 hrs.	Post-mortem: wounds all firmly closed.
46	F. Lange, Medical News, 1887, 630.	14	24 hours	No shock; some tympanites; no pain; tenderness.	7 wounds small intestine.	Wounds sutured. . .	Recovered.	
47	Priddy, Jour. Am. Med. Ass'n, 1887, 649, ix.	60	108 hours	Profound shock; great abdomin'l pain; hiccough, but no vomit; rode four miles on horseback after accident.	Lacerated wound of colon 6 in. long; wound of mesocolon, mesentery and of jejunum; quantity bloody serum and pus in cavity.	Wounds sutured; drainage and iodoform packing.	Recovered.	Almost died on table; time of operation, 35 minutes.
48	E. Andrews, Chicago Med. Jour. & Exam., Aug., '87.	F. Adult	16 hours	Evidences of peritonitis; waited for Symptoms.	1 intestinal wound; much bloody serum; intestines injected and adherent.		Died.	No post-mortem.
49	Trelat, Gazette d' Hosp., April 16, 1888.	F. Adult	22½ hours	Shock; meteorism.	2 wounds small intestine.	Lembert sutures . .	Died in 20 hrs.	Post-mort.: heart and liver very fatty, lungs congested.
50	Labbé, Revue de Chir., April, '88.	29	15 hours	Collapse.	10 wounds ilium, 1 of mesentery; 1½ quarts free blood and fæcal matter in cavity; peritonitis had begun.	Wounds sutured, cavity well irrigated.	Died in 20 hrs.	
51	C. E. Case, Med. News, Sept. 24, 1887, 379.	Adult	. .		2 wounds intestine; considerable am't free blood.		Recovered.	
52	M. Pickett, Med. Press, West. N. Y., '86, i, 247.	13	. . .	No shock	No visceral lesion		Recovered.	
53	C. H. Dalton, Ann. Surg., Feb., 1889.	29	3 hours	Vomiting from time of accident; intense pain in epigastrium; successful hydrogen test.	15 perforations small intestine.	Two excisions of intestine 3 in. each; remaining wounds closed by Lembert Suture.	Died in 1 hr.	Time of operation, 3 hours.
54	M. Price, Trans. Penn. State Med. Soc., 1888, 200.	F. 14	24 hours	Condition alarmingly bad; large amounts blood passed from bladder; symptoms of peritonitis well marked.	Anterior portion of liver perforated by ball; also large hole through upper portion of right kidney; much free blood and clots.	Right kidney removed; irrigat'n, glass drain; no treatm't directed to liver wound.	Recovered.	Several absc's of liver formed subsequently and were opened or discharged spontaneously; convalescence tardy.
55	J. B. Murphy, Jour. Am. Med. Ass'n, 1888, x, 290.	26	4½ hours	Little shock; no pain.	11 perforations of intestine; much blood.	Double continuous catgut suture to w'nds; abd. cleansed; no drain.	Died in 36 hrs.	Post-m.: great hæmorrhage into peritoneum from divided ren. artery; no peritonitis.
56	J. B. Murphy, Ibid, 291.	22	2 hours	Some shock; dulness in lower abdomen.	Large perforation ant. lobe of liver; much free blood; hæmorrhage had ceased.	4 pints blood removed; abd. cleansed; no drain.	Recovered.	
57	J. B. Murphy, Ibid.	57	2 hours	No shock	Perforation of liver and of transverse colon; fæces and blood in cavity.	Continu's catgut sut. to bowel wounds; abd. irrigated.	Recovered.	
58	J. B. Murphy, Ibid.,	26	8 hours	Had walked 2 miles after accident; profound shock.	2 wounds of stomach, 1 of liver, 1 of mesentery; extravasation of food.	W'nds united by continuous catgut sut.; cav. washed; rubber drain.	Died in 14 hrs.	Given ¾ gr. morph. by mistake after ope'n; marked opium poisoning; post-m.: negative.
59	A. E. J. Barker, Brit. Med. Jour., Mar. 17, 1888, 571.	23	3½ hours	Some shock; tenderness of abdomen.	Abrasion of liver; extensive tear of omentum; ball found in omentum.	Abdomen cleansed and freed of clots.	Recovered.	
60	A. E. J. Barker, Ibid.	37	4½ hours	Condition good; no shock.	2 perforations of intestine; free blood.	Excis'n and circular continuous sut. of 1 inch of intestine; abdomen cleansed.	Died in 6 days.	Post-m.: "hypostatic" pneum.; blood-stained serum in per. cav.; excis'n result perfect.
61	N. B. Carson, St. Louis Cour Med., March, 1887.	25	6 hours	Condition good. . . .	Perforation sm. intestine and of mesentery.	Resection 2½ in. intestine; unable to cleanse cavity.	Died.	No post-morten.
62	F. W. Parhau, New Orleans M. & S. Jour., '86–7, N. S., xiv, 508.	34	2 hours	Considerable shock . .	Perforations of small intestine, ascending colon and bladder.	Suture of wounded viscera.	Died.	

TABLE 1—*Continued.*—GUNSHOT WOUNDS.

C.	Operator and Reference.	Age.	Time after injury	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result	Remarks and post-mortem.
63	F. W. Parham, Ibid.	22	3 hours	Much shock. . .	Wounds small intest. and external iliac artery.		Died.	
64	J. W. Hedden: Trans. Med. Ass'n Missouri, '86, 43.	30	. . .	Great pain in right side shoulder and back; dyspnœa.	Perforation of liver; some free blood; piece of cloth in cavity.	Blood, etc., removed abdomen cleansed.	Recovered.	
65	T. H. Manly, Med. News, Sept. 24, 1887.	39	2 hours	Distension of abdom'n by fluid; weak.	2 wounds descending colon 1 of mesentery; bleeding mesenteric artery.	Perforations closed by Lembert suture; drainage.	Recovered.	
66	V. G. Thorpe, Lancet, 1888, ii, 1118.	F. 39	30 hours	Collapse; peritonitis.	Gas in cavity.	Not mentioned. . .	Died 28 hrs. after op.	Post-mort. large am t blood in cav 2 perfor stomach; patulous divided superior mesenteric artery
67	C. E. Bell, Brit. Med. Jour., Mar. 16, 1889, 589.	18	2 hours	Sh'ck; pain over whole abdomen vomited contents of stomach.	7 perforat'ns sm. intestine	Lembert sutures; abdomen cleansed.	Recov	
68	D. V. Dean, Records St. Louis City Hosp., Jour. Am. Med. Ass'n, Nov. 5, '87, 579.	16	. . .	Condition very bad. .	Wound of intestine . . .	Suture of intestine; cleansing of abdomen.	Died.	
69	H. H. Mudd, Jour. Am. Med. Ass'n, Nov. 5, '87, 579.	17	3 days	Condition good. . .	Wound of liver and of stomach.	Gastric wound sutured.	Died,	Post-mortem peritonitis, no other w'nds.
70	David Prince, Jour. Am. Med. Ass'n, Nov. 5, '87, 579.	30	1 hour	Condition good; intense abd'l pain.	Wound of ascending colon.	Sut. of colon wound.	Recov.	
71	David Prince, Tr. Am. Surg. Ass'n, 1887, 213.	Adult	6 hours	Shot in several places by a mob.	5 wounds of intestine, 2 of bladder; ball emerged thro' sacrum; fæcal extravasation.	W'nds sutured; partial irrigation.	Died in 12 hrs.	Peritonitis, no post-mortem record
72	Link, Miss. Med. Ass'n, 1887, also Trans. Int. Cong. 1887, i, 543.	11	Soon.	Abdomen penetrated by small fragment of percussion shell.	4 perforations of ilium, 2 of mesentery.	W'nds sutured; foreign body removed from mesenteric fold.	Recov.	
73	W. S. Rodman, Am. Pract. and News, Mar. 31, '88, 196.	20	2 hours	Great pain and shock.	2 wounds and 1 abrasion small intestine, wound of liver (large; bleeding branch superior mesenteric; much free blood in cavity.	Intestine sutured by continuous method; no drain.	Died in 23 hrs.	Post-mort. injection of bowels and tympany.
74	W. O. Roberts, Am. Pract. and News, 1888, vi, 5.	37	2 hours	Emphysema of area of hand around entrance w'nd; shock; later, tympanites; peri-umbilical pain.	4 wounds of colon	Wounds sutured; irrigation; drain.	Died in 60 hrs.	Post.mortem. peritonitis, drain had not worked: drunkard.
75	Henry Sherry, Annals Surg., 1888, viii, 257.	19	. . .	Abdomen tympanitic.	3 perforations of colon; fæcal and bloody extravasation.	Continuous suture of wounds; irrigat'n, drainage.	Recov.	
76	S. T. Armstrong, Report U S. Mar. Hospital Service, 1886, 133.	26	3 days.	Weak; abdom'l pain; some shock; belly tender and swollen.	Marked advanced peritonitis; no visceral lesions found.	Drain tube	Died in 60 hrs. af. op'n	Post-mortem: peritonitis: wound of liver, much free blood.
77	C. A. Wheaton, N.-Western Lancet, March 1, '89, 57.	Adult	2 days.	Rode 5 miles on horse; back after injury; gen'l peritonitis and sinking rapidly.	Large wound ascending arch of colon; notch of liver border; wound of kidney.	Wound sutured. . .	Died in 1 hr.	Post-mortem: another wound of post-wall of colon found
78	Ohage, N.-Western Lancet, March 1, 1889, 58.	21	7 hours	Great pain, vomiting of blood and food, but condition fair.	2 perforations of stomach, large hole thro' spleen, much blood; perforation of diaphragm.	Gastric wound sutured; cautery to splenic wound.	Died in a few hours.	Post-mortem. another wound of stomach discovered.
79	Baudens, Guenther Opr. Chirurg., A, iv.	Adult	. . .		Fæcal extravasation; w'nd of transverse colon.	Intestinal wound sutured.	Recov	
80	Baudens, Plaies d' Armes é few.	Adult	. . .	Ball entered at umbilicus and came out at quadratus lumborum.	2 w'nds of intestine, one of them completely destroying surrounding bowel.	Eight inches intestine resected; Lembert sutures.	Died 3d day.	No post-mort. record.
81	F. J. Lutz, Annals Surg., vii, '88, 91.	30	3 hours	Condition good; resonance over hepatic region.	4 wounds small intestine, 6 of mesentery; profuse hæmorrhage.	Lembert sut.; peritoneum cleansed.	Died in 4 hrs.	No post-mort. record
82	Newell, Brit. Med. Jour., Feb. 25, 1882, 260.	Adult	Next day.	Abdomen tympanitic; no liver dulness; shot-gun injury at short range.	½ inch wound, also groove of small int.; much blood.	Wads and pieces of clothing removed.	Recov.	Passed 20 shot per anam next day.
83	M. Freger, Deut. Med. Woch., July 15, 1886.	19	6 hours	Patient collapsed . .	Injury to small intestine. .	Intestine resected. .	Recov	
84	A. C. Bernays, Pittsburgh Med. Rev., April, 1888.	11	10 hours	Wound posterior, midway between ilium and last rib.	1 wound small intestine; bullet lodged in mesentery; piece of cloth removed from peritoneum; much blood.	Lembert sutures; abdomen cleansed; no drain.	Recov	
85	A. C. Bernays, Ibid.	F. 9	1 hour	Condition good; shot with large bird shot.	3 perforations of ascending colon; 3 shot in lumen of colon; extravasation of blood and fæces	Lembert sutures; abdomen cleansed; no drain.	Died in 3 days.	No post-mortem.
86	H. C. Dalton, Ann. Sur., '88, viii, 100.	22	2 hours	No shock, pain or vomiting; condit'n good.	2 perforations stomach, 1 of left lobe of liver; considerable hæmorrhage.	Silk Lembert sutures to stomach, large catgut sut. to liver.	Recov	
87	J. D. Griffith, Ann. Sur., '88, viii, 100.	26	6 hours	Considerable shock . .	3 perforations small intestine: clots in cavity.	Lembert sutures . .	Died	Post-mortem: nothing more found.

TABLE I—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
88	J. D Griffith, Ann. Sur., '88 viii, 100.	21	8 hours	Intense shock.	11 wounds small intestine, 2 of colon; 2-inch wound pyloric end of stomach; very great extravasation of food.	Graft from meso-colon stitched into stomach w'nd; 12 Lembert sutures.	Died in 11½ hrs	Could not approximate stomach w'nd without producing pyloric stenosis; time of operation, 4½ hrs.; did not come out of shock.
89	O. Halbert, Trans. Texas State Med. Ass'n, 1886.	21	. . .		W'nd of liver; much blood in cavity.	Abdomen cleansed.	Recov.	
90	C Fenger, Journal Am. Med. Ass'n, 1888, ii, 83.	50	6 days.	Upon admission, slight shock; *unsuccessful complete hydrogen test;* on 6th day gradual collapse & signs of peritonitis.	No visceral wounds found; large amount milky purulent fluid with fæcel odor in cavity.	Abdomen partially irrigated; drain.	Died 8 hrs. after op.	Post-mortem: number of localized periton. abscesses; intestines congested; no perforations or visceral wounds found.
91	C. Fenger, Ibid.	23	3 hours	Much shock; successful hydrogen test; blood from rectum.	14 perforations small intestine, 2 abrasions of bowel, 4 wounds of mesentary; great quantity of free blood in cavity.	2 resections of intestine; Lembert sutures to w'nds; gas insufflat'd to prove work, etc.	Died on table.	Duration of operation, 2¾ hrs.; transfusion at end. Post-mort.: another wound (near pylorus) discovered.
92	W. L. Schenck, Jr. Am. Med. Ass'n, Oct. 13, '88, 521.	49	16½ hours	Much shock and exhaustion; successful hydrogen test.	9 perforations of small intestine, 1 of mesentery.	Lembert sutures; abdomen cleansed.	Died in 2 hrs.	Time of operation, 3½ hours.
93	A. P. M Vance, Pittsb. Med. Rev., 1888, 63.	17	1 hour.	No blood from bladder before operation; great shock.	6 large wounds small intestine, blood, etc.	Wounds closed by continuous suture; drain.	Died in 55 hrs.	Post-m.: ureter divided by ball; blood in urine after operat'n.
94	A. B. Strong, Pittsburgh Med. Rev., 1888, 206.	20	20 hours	Shock; collapse. . . .	4 perforations small intestine; cavity filled with blood; violent hæmorrh.	Wounds sutured: cavity cleansed; drainage.	Died.	Never rallied; no post-mortem record.
95	A. B. Strong, Pittsburgh Med. Rev., 1888, 206.	25	. . .	General peritonitis . .	No visceral wounds found.	No drain	Died,	No post-mort. record.
96	J. E. Summers, Jr., Pittsb. Med. Rev., 1888, 240.	35	24 hours		Wound of liver and of kidney; abd. full of blood.	Iodof'm gauze packing; abd. cleansed.	Died in 28 hrs.	Died from recurring hæmorr.; no post-mortem record.
97	J. M. Barton, Pittsburgh Med. Rev., 1888, 291.	F. 35	24 hours	Wound over stomach.	No visceral iujury . . .	Abdomen cleansed; drain.	Died in 20 days.	Died fr. sepsis spreading from ball track to peritoneum; post-m.: 2 w'nds stomach.
98	Wm. Mackie, Med. News, June 9, '88.	27	3 hours	Copious blood-tinged vomit; excruciating pain referred to umbilicus; successful hydrog. test.	2 perforations of stomach; 2 of duodenum; 2 wounds of mesentery, 1 of mesocolon; profuse hæmor.	Wounds sutured; abdomen cleansed.	Died in 36 hrs.	Post-mort.: septic peritonitis; pint sanguinolent fluid in cavity.
99	N. Senn, Medical News, '88, ii, 202.	72	4 hours	Entrance wound in 6th left intercostal space space surrounded by emphysema; 7th rib fractured; bloody vomit; pain; partial collapse; successful hydrogen test.	1½ inch wound of greater curvature of stomach; also another perfor. of posterior wall (located by the gas); great hæmorrhage.	Lembert sutures to wounds; abdomen cleansed.	Died on table.	Post-m.: bullet passed thro' pancreas and spinal canal.
100	N. Senn, Medical News, Nov. 10, 1888, 528.	16	3 hours	Some shock; pain; signs of fluid in peritoneum; bullet passed in stool brought away by enema; successful hydrog. test.	10 perforations of small intestine, 4 of mesentery, 1 of anterior portion of rectum; much free blood and food and fæcal extravasation.	Lembert sutures; abdomen cleansed; glass drain.	Recovered.	
101	N. Senn, Ibid, 529.	18	12 hours	Immediate pain and shock; successful hydrogen test; beginning peritonitis.	5 perforations small intestine, advanced peritonitis, great am't free blood; intest. distended by blood clots 3 feet; 4 wounds of mesentery.	Lembert sutures to bowel; ligation of bleeding portions of mesentery *en masse;* irrigation; drain.	Died in 8 hrs. af. op'n	Post-mortem: general septic peritonitis.
102	C. Fenger, N. Am. Practioner, Feb., 1889, 85.	26	3 hours	No shock; no pain; negative air test.	None found		Recovered.	
103	David Barrow, Jr. Am. Med. Ass'n, June, 18, '89, 835.	31	3½ hours	Great collapse; prolapse of omentum; fluid in peritoneum; gas from wound.	7 large perforations small intestine, 5 lacerations of mesentery; branches of superior mesenteric artery cut and bleeding.	W'nds sutured; vessels tied; irrigat'n.	Died in 3 hrs.	Died of shock from the prim'y loss of blood; no post-mortem.
104	Dav. Barrow, Ibid.	25	4 hours	Some shock, vomiting, condition fair.	9 wounds of small intest., several of mesentery; a quart of bloody fluid in cavity.	4 inches small intes. resected, wounds sutured.	Died in 15 hrs.	Spent an hour trying to return intes., then punctured them and let off flatus; no p.-m.
105	Dav. Barrow, Ibid.	29	6 hrs.	Very little shock . . .	None found	Irrigation.	Recov.	
106	Dav. Barrow, Ibid.	25	13 hours	Little to indicate serious injury	Wound through right lobe of liver; bile duct cut; hæmorr. from liver w'nd; much free blood and bile.	Liver wound packed with gauze; irrigation.	Died in 5 days.	No abdominal symptoms; died of cholemia; no post-m. rec.
107	O. H. Allis, unreported.	22	30 hours	Violent peritonitis and shock.	Wound thro' liver; ball imbedded in spine; violent general peritonitis.		Died in 24 hrs.	
108	A. C. Bernays, N. Y. Med. Journal, May 4, 1889.	Adult	Soon.		Perforations of stomach, duodenum and jejunum.		Recov.	
109	E. M. Moore, Jr., Med. Press, Western N. Y., April, 1889, 181.	47	8 hours	Some shock; unsuccessful air experim't.	5 perforations intestine, 7 of mesentery, 1 of omentum.	Exc'n of int. including 3 perf'ns; other w'nds sutured; irrigation; drain.	Died in 10 hrs.	Died of shock; operation lasted 2½ hrs; post-mort.: nothing further.
110	C. K. Bridden, N. Y. Med. Jour., Mar. 9, '89, 255.	20	2 hours	Moderate shock; blood in urine.	15 perforations intestines.	Resection 1½ inches small int.; other wounds sutured.	Died in 36 hrs.	Oper'n lasted 3½ hrs; post-m.: overlooked wound of bladder.

TABLE 2—STAB WOUNDS.

Case	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result	Remarks and post-mortem
1	G. Tiling, St. Pgb. Med. Woch., 1884, No. 24.	19	Soon.	Vomited much blood.	Much blood; 1¾ in. wound of gut; curvature of stomach; wounds of omentum	Lembert sutures	Recovered	
2	W. O. Roberts, Am. Pract., 1884, xxix. 13.	44	A few hours	Considerable hæmor. from wound.	2 wounds of small intestine, 2 of mesentery.	All sutured . . .	Recovered.	
3	Barker, Lancet, 1886, i, 347.	Adult	3½ hours		Incised wound of omentum	None	Recovered.	
4	J. B. Roberts, Polyclinic, 1886, iii, 93.	F. 19	2 hours	Great shock, vomiting, violent pain.	2 wounds of small intestine	Lembert sutures	Died in 2 days.	Post-m., purulent peritonitis, one wound overlooked.
5	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	22	. .		2 incised wounds of small intestine—1 cut serous and muscular coats of intest.	Czerny-Lembert sut.	Recovered.	
6	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	57	3 hours		None found	None	Recovered.	
7	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	25	Next day	Had been stabbed in hernia; hernia reduced; peritonitic symptoms next day.	2 large wounds of small intestine.	Resection of gut, including wounds.	Died in a few hours.	Post-mort., resection all right, no other wounds.
8	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	22	4 days.	Considerable hæmor from external w'nd	5 wounds of small intestine.	Czerny-Lembert sutures.	Died in 40 hrs.	Post-mort.: wounds in good condition; no other wounds.
9	J. McF. Gaston, Med. and Surg. Rep., '86, liv, 739.	30		Much shock; afterward acute peritonitis.	Brush burn of colon.	None	Died shortly	
10	J. G. Brooks, Med. Herald, 1886, viii, 334.	11	A few hours	Great shock; abdomen tense and dull.	Great quantity of blood; cut and bleeding mesentery.	Vessels ligated . . .	Recovered.	
11	W. S. Tremaine, Med. News, 1886, xlix, 601.	18	10 hours	Opium poisoning also; free bleeding from wound.	None	None	Died.	Admitted with opium poisoning, fr. which he died.
12	J. B. Roberts, unpublished.	40	¾ hour.	Violent abdom'l pain; prolapse sm. knuckle intestine; free hæm.	4 wounds of small intestine, 1 of colon; meseut'y transfixed.	All closed with Lembert sutures.	Recovered.	
13	Kwiecinski, Pregl lik. Krakow, '85, xxiv, 71.	20	At once.	Great pain; vomiting.	3 wounds of small intestine.	Sewed.	Recovered.	
14	G. Gaulco, Genova, 1886. Due casi di enfer fer ferite di intestine.	30	. . .	Gored by cow.	No visceral wounds.	Abdomen cleansed .	Recovered.	
15	G. Gaulco, Genova, 1886. Due casi di enfer. fer ferite di intestine.	36 F.	. . .		Wounds of intestines. . . .	Lembert sutures . .	Recovered.	
16	Wunderlich, N. Y. Med. Jour., 1887, i, 68.	19	6 hours		¾ in. wound of gut—anterior curvature of stomach.	Lembert sutures .	Died in 1 hr.	Post-mortem: wounds in good condition.
17	J. B Deaver, Trans. Phila. Co. Med. Soc., Jan. 8, '87.	Adult	. . .	Much blood in peritoneal cavity; great shock.	Wound of spleen	Excision of spleen .	Died.	Post-mortem: wound of kidney, etc.
18	T. G. Morton, Ibid.	30	9 hours	Increasing pain about wound; also emphysema; no shock.	Wound of omentum, 1½ in.	Suture of omentum; ligature of bleeding omental artery.	Recov.	
19	J. Avery, Med. Age, 1885, iii, 412.	Adult	7 hours	Much shock.	2 wounds of small intestine, 1 of mesentery.	Wounds trimmed, & Glover's suture introduced.	Recov.	
20	Jos. M. Fox, Med News, Nov. 12, 1887, 567.	32	3½ hours	Shock; much hæmorrhage.	Large bleeding wound of liver; much free and clotted blood.	Liver wound cauterized and hæmorr. stopped by actual cautery; cavity freely irrigated.	Died in 20 hrs.	Post-m.: everything in good order; died of loss of blood and subsequent shock.
21	T. G. Morton, Med. News, Nov. 26, 1887, 632.	F. 20	2 hours	Penetrating w'nd near umbilicus; slight abdominal pain; no other symptoms except protrus'n small piece of omentum.	None found; no blood . . .	Omentum washed and returned.	Recovered.	Insisted upon going home and attend'g to househ. duties next day; during conval. was not confined to bed; no hernia in wound afterwards.
22	Burckhardt, Cent. f. Chir., No. 5, 1887.	25	. . .	Increasing collapse; percussion dulness of whole belly.	½ inch wound left lobe of liver, bleeding violently; was 2 inches deep belly full of blood.	Liver wound packed wi. strips of gauze, abdomen cleansed, drainage.	Recov.	At end 8 weeks a lost strip of gauze presented and was removed; wound then ceased suppurating; sinus closed in 7 mos.
23	J. M. Barton, Phila. Med. Times, Ap. 6, 1888, 428.	25	4 hours	Venous bleeding from wound; shock from loss of blood.	Wound of anterior border of liver, ¾ in wound transverse colon; free hæmorrhage from latter.	Lembert sutures to colon wound, nothing to liver—was not bleeding; abd. cleansed; no drain.	Recov.	
24	Burckhardt, Jour. Am. Med. Ass'n, July 9, 1887, 62.	30	2 hours	Entire collapse; belly full of fluid.	Wound large curvature of stomach; great am't free clots and blood; very free bleeding from wound.	2 rows Lembert sutures.	Recov.	
25	J. H. Parkinson, Sacramento Med. Times, April, '87, 62.	F.	2 hours	Much and repeated bloody vomit.	Extensive wound posterior wall of stomach; much free blood.	W'nd closed by Lembert sutures; uncontrollable deep bleeding; free irrigation.	Died in 15 hrs.	Post-m.: another w'nd of stomach found; also, perforation left renal vein.

TABLE 2.—STAB WOUNDS—*Continued.*

No.	Operator and Reference	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
26	H. C. Dalton, Annals Surg., Feb., 1889, 91.	28	5 hours	Great agony; protrusion & strangulat'n ¾ of stomach; copious bloody vomit after reposition of stomach.	¼ inch wound anterior surface of stomach; free blood in cavity.	Lembert sut.; cavity mopped out; no drain.	Recov.	Nourished wholly by enemata for 10 days.
27	H. C. Dalton, Ibid. p. 94.	F. 24	Soon.	Fell upon fence picket; wound 2½ inches in left axillary line bet. 8th and 9th ribs; omentum and 4 in. small intes. protruding; pike entered abdomen thro' thorax.	No visceral injury found; much free blood; wound of diaphragm.	Bowel and omentum cleansed and replaced; wound of diaphragm sutur'd with catgut; abdomen cleansed; no drain in abdomen.	Recov.	Drain into thoracic wound.
28	H. C. Dalton, Ibid, p. 97.	69	3 hours	Excrutiating belly pain; fair condition; prolapse of 2 inches omentum,	3 perforations small intestine; large amount free blood.	Lembert sutures; abdomen cleansed; glass drain.	Died in 31 hrs.	Vomiting, etc., at end 24 hours; no post-mortem record.
29	H. C. Dalton, Ibid, p. 97.	26	3 hours	Negative hydrog. test.	Considerable free blood; no visceral injury.	Irrigation; glass drain.	Recov.	Symptoms of peritonitis at once stopped by large dose salts on second day.
30	H. C. Dalton, Ibid, p. 97.	22	2 hours	Condition good	Small amount blood; no visceral injury.	Abdomen cleansed; no drain.	Recov.	
31	H. C. Dalton, Ibid, p. 98.	24	Few hours	Great shock; intense pain; drunk, and had walked far after being injured.	Small am't blood; no visceral injury discovered.	Abdomen cleansed.	Died in 36 hrs.	No post-mort. record.
32	Molitor, Archiv. Med. Belges, Brux, 1887, 173.	. . .	. . .	Intestine protruding.	2 wounds intestine, 1 of mesentery.	Intestine sutured; mesentery ligated.	Recov.	
33	Postemski, Bull. d' Acad. Med. di Roma, 1887-'88, ix, 272.	. . .	. . .	Signs of hæmorrhage.	Wound left lobe liver 2¾ in. in length, ½ inch deep; much free blood.	Liver wound closed by fine gut sutures, bleeding then stopped.	Recov.	
34	N. B. Carson, St. Louis Cour. Med. 1887, No. 3, 226.	F. 40	36 hours	Condition good; abd. distended and somewhat tender; pulse intermittent.	Wound of liver and gall-bladder.	Suture of liver . . .	Died.	Post-mortem: peritoneum "almost normal."
35	Tuholski, St. Louis City Hos. Records, Jour. Am. Med. Ass'n, 1887, Nov. 5, 581.	21	. . .	Condition good	None found	Abdomen cleansed.	Recov.	
36	D. V. Dean, Ibid. .	32	. . .	Condition good	Abdomen contained much decomposed blood and serum; no visceral wounds.	Cleansed	Died.	No post-mort record
37	D. V. Dean, Ibid. .	30	. . .	Condition good	No visceral injury.	Peritoneum cleans'd.	Recov.	
38	Gal, Centralbl. für Chirurg, '86, 686.	45	9 hours	Gored by cow; condition good.	No visceral wound		Recov.	
39	Dav. Prince, Tran. Am. Surg. Ass'n. 1887, 214.	Adult	. . .		¾ inch wound of stomach .	W'nd sutured; drain	Died in 3 hrs.	
40	A. P. M. Vance, Am. Prac. and News, 1887, iv, 195.	22	2 hours	Profound shock; tense belly walls.	Wound transverse colon; large amount blood and fæces in cavity.	Wound sutured and abdomen irrigat'd, rubber drain.	Recov.	
41	J. H. Packard, Med. and Surg. Rep'r, Jan. 5, 1889, 20.	12	2 hours	Marked collapse; some protrusion of intestines; had fallen upon moving circular saw.	1 entire division of intestine, several tears of omentum; 2 abrasions of intestine.	Lembert sutures to wounds; omentum ligated; irrigation and drain.	Recov.	
42	M. H. Richardson, Boston M. and S. Jour., Sept. 8, '87.	F. 23	Soon.	No symptoms.	None found	Abdomen explored; no drain.	Recov.	
43	Girdlestone, Australian Medical Jour., '87, ix, 315.	41	12 hours	No protrusion at first, but before reaching hospital 12 inches intestine were out; nausea, but condit'n fair; cut by glass.	Much blood; no visceral wound, but prolapsed gut, dry and very dirty.	Abdomen cleansed; drain.	Recov.	
44	T. J. Bennett, Daniels' Texas Med. Jour, '87, 3, 213.	17	16 hours	Great pain; blood and food discharged thro' wo'd; condition fair.	Much food, fish bones and free blood; 1½ in. wound of stomach; wound of omentum.	Stomach sutured; abdomen cleansed, drainage.	Recov.	
45	J. W. Heddens, Pittsburgh Med. Rev., Aug., 1887, 231.	26	. . .		Considerable free blood in cavity.	Abdomen cleansed; no drain.	Recov.	
46	C. A. Jersey, Pittsburgh Med. Rev., Oct., 1887, 281.	27	36 hours	Peritonitis.		Drainage	Died.	Died of shock; no other details.
47	A. P. M. Vance, Pittsb. Med. Rev., 1888, 63.	23	3 hours	Two stab wounds of abdomen.	No visceral wounds. . . .	Abdomen irrigated; no drain.	Recov.	
48	C. B. Penrose, Pitt-b. Med. Rev., 1888, 63.	40	5 hours		Wound of transverse colon	Wound sutured; abdomen irrigated.	Died on 3d day.	Post-mort.: abdomen in good condition; cerebral embolism.
49	A. C. Bernays, Pittsburgh Med. Rev., 1888, 89.	35	10 hours		1 wound of mesentery, 1 of omentum; hæmorrhage.	Wounds sutured; abdomen cleansed; no drain.	Recov.	
50	A. C. Bernays, Ibid.	38	. . .	Five separate stabs over liver area.	5 extensive wounds of liver.	Wounds sutured; no drain.	Died.	Suicide; no post-mortem record.

TABLE 2—STAB WOUNDS—*Continued.*

Case	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries	Result	Remarks and post-mortem
51	E. A. Waggoner, Pittsb. Med. Rev., 1888, 239.	26	38 hours	General peritonitis. .		Drainage	Died in 52 hrs.	Died of continued peritonitis, no post-m. record.
52	C. B. Penrose, Pittsburgh Med. Rev., 1888, 291.	30	Soon		Bleeding mesenteric vessels, serous coat intestines cut, free blood.	Vessels tied; Lembert sutures.	Died on 3d day.	Post-mortem no peritonitis.
53	C. B. Penrose, Ibid.	38	Soon.	Six-inch transverse wound of abdomen: most intestines outside cavity.	No visceral injury.	Bowels cleansed and returned; abdom'n cleansed; glass drain.	Died in 8 hrs.	Died of shock. . . .
54	Jno. Ashhurst, Jr., Penn. Hosp. Rep., 1888, Case 172.	28	Soon		4 wounds small intestine, 1 of bladder.	Lembert su.; irrigation; glass drain.	Died in 33 hrs.	Post-mortem: peritonitis due to infiltrat'n of urine from overlooked w'nd of bladder near trigone.
55	Jno. Ashhurst, Jr., Ibid, Case 173.	38	Soon.	Stabbed with ice-pick; great shock.	1 intra-peritoneal wound of bladder.	Wound sutured by Lembert method; rubber drain.	Recov.	
56	Wm. Hunt, Ibid, Case 552.	27	Soon.	Omental protrusion .	2 perforations small intest	Lembert sutures; irrigation; no drain	Died on 5th day	Died of delirium tremens; post-mortem: abdomen in excellent condition.
57	C. B. Penrose, Ibid, Case 911.	30	Soon.	Three stabs of abdo'n.	2 wounds liver; great hæmorrhage; 2 wounds peritoneal coats of intestines.	Intestinal wound sutured; liver wound packed with catgut	Died.	Post-mortem: no peritonitis.
58	C. B. Penrose, Ibid, Case 1802.	38	Soon.		No visceral lesions		Recov.	
59	T. G. Morton, Ibid, Case 1467.	26	Soon.	Two stabs of abdomen; great shock.	3 omental wounds; several tears of intestinal walls; kidney w'nded and bleeding; great hæmorrhage.	Wounds sutured; irrigation; glass drain.	Died in 19 hrs.	Died of shock.
60	John H. Packard, Ibid.	22	. . .	Omental protrusion. .	Wound of omentum.	Wounded part omentum ligated and excised; irrigation; no drain.	Recov.	
61	Chas. Ball, Dublin Jour. Med. Sci., 1888, lxxxv. 357.	15	4 hours	Chisel wound of abd.; vomiting of blood; stained material; great shock; signs of hæmorrhage.	½ in. wound greater curvature of stomach; much free blood from wounded vein of meso-colon.	Lembert sutures; abdomen cleansed.	Recov.	
62	A. H. Perfect, N.Y. Med. Jour., June 30, 1888, 704.	45	Soon.	Great hæm.; protrus'n portion of liver, also portions of omentum and hepatic flexure of colon.	Wound of liver 3½ in. long, ¾ inch deep.	Liver w'nd sutured and hæmorrhage ceased.	Recov.	Pleura opened also by axe and lung wounded 8th rib divided.
63	J. C. Sexton, Med. News, Dec. 15, 1888, 672.	29	9 hours	Shock, great pain, prolapsed knuckle of intestine; extravasat'n of fæces through abdominal wound.	2 large wounds small intestine; large am't extravasated blood and fæces.	Lembert sutures to wounds; abdomen cleansed, irrigated and drained.	Recov.	
64	J. C. Sexton, Ibid, 674.	29	6 hours	Struck by fragment from cannon and cicatrix from former abd. section for traumatism (68 days old) torn open; great shock; intest. and mesentery prolaps'd and strangulated.	No visceral wounds; no sign of wounds which had previously been sewn.	Abdomen irrigated.	Recov.	
65	T. W. Huntington, Sacramento Med. Times, Oct., 1888, 452.	24	3 hours	Peritoneum appeared to be distended with blood; free hæmorr. from wound.	3 pints blood in cavity; no visceral wounds; blood apparently came from veins near kidney.	Abdomen cleansed.	Recov.	
66	Finlay, Edinburgh Med. Jour., Ap., 1889, 925.	24	. . .	Prolapse of intestine; two abd'l wounds.	Wounds of small intestine.	Continuous suture to intestinal wounds.	Recov.	
67	J. Grindon, St. Louis Cour. Med. 1887, ii.	F. 30	1 hour.	Condition good . . .	Wounds of small intestine.	Excision of portion small intestine.	Recov.	
68	Jno. Ashhurst, Jr.[4] unreported.	23	1 hour.	Condition good. . .	2 large wounds ascending colon; 1 punctured wound colon; much extravasated blood and fæces; colon distended with blood.	Wounds sutured; glass drain.	Died in 40 hrs.	Post-m.: another large w'nd of colon found; several pints disintegrated blood in colon and rectum.
69	T. G. Morton, unreported.	Adult	Soon.	Condition poor; signs of hæmorrhage.	3 wounds descending colon; great extravasation of blood and fæces.	Wounds sutured; bleeding points ligated; abdomen irrigated.	Died in 30 hrs.	Post-m.: great hæmorrhage from giving way of mesenteric vessel.
70	J. M. Fox,[4] unreported.	19	2 hours	Great shock.	Bleeding vessels of stomach and of pylorus; clots and blood in cavity.	Wounds sutured; bleeding controlled; no drain.	Died in 33 hrs.	Peritonitis next day; abdomen reopened, irrigated and drained; post-m.: wound of liver; peritonitis.
71	Benisoviteh, Khirurgetchesky Vestink, No. 2, 1887, 887.	18	3 hours	Continuous nausea & hæmorrhage from wound; shock.	Extensive bleeding wound of serous & muscular coats of stomach; belly filled with clots and blood.	Irrigation, repair of wound, drain.	Recov.	
72	O. H. Allis, unreported.	20	3 hours	Some shock; signs of intra peritoneal hæmorrhage; unsuccessful hydrogen test.	Large transfixing wound of root of mesentery; terrific hæmorrhage; transfixing wound small intest. each extrem. ½ inch long.		Died on table.	Died of frightful hæmorrhage.

TABLE 2.—STAB WOUNDS—*Continued.*

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
73	C. C. Jones, N. Y. Med. Jour., May 12, 1889.	19	. . .	Protrud'g bit of omentum; little shock.	¼ inch wound of stomach; much extravasated food and blood.	Wound sutured; abdomen cleansed.	Recov.	
74	Baudens, Ann. of Surg., May, 1886, 392.	. . .	. . .		2 perforations of intestine.	Wounds sutured. . . .	Died.	Post-mortem: another wound, of cæcum, discovered.
75	Jobert, Günther, Operationslehre.	23	. . .	Prolapse of intestine.	Wound enlarged; 2 wounds of intestine.	Wounds sutured. . .	Died in 38 hrs.	Post-mortem: another perforation found.
76	Davids, Günther, Operationslehre, iv, 163.	Adult	Soon.	Gored by cow; protrusion of intestine.	2 wounds protruded intest.	Gut sutured.	Recov.	
77	Koenig, Trans. 18th Cong. German Surg., Med. News, June 22, 1889, 694.	Adult	14 hours				Recov.	No details.
78	Geo. Lawson, Lancet, Mar. 3, '88.	. . .	2 hours	Wound in fifth intercostal space near nipple; extravasation of food through wound; much shock.	1½ in. w'nd cardiac extrem. anterior wall of stomach; wound of diaphragm.	Stomach wound sutured; irrigation of peritoneum and pleura; drain to peritoneum.	Died in 12 hrs.	Died of asphyxia and peritonitis; post-m.: wound and collapse of lung; 8 oz. fluid in pleura; 4 oz. in peritoneum.
79	J. A. Black, Daniels' Texas Med. Jour., Dec., 1887.	17	12 hours	Great pain; extravasation of food thro' wound.	Large wound stomach and omentum; fish bones and other food in cavity.	Wounds sutured. . .	Recov.	

TABLE 3.—RUPTURED BLADDER.

No.	Operator and Reference.	Age.	Time after Injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of Intraperitoneal Injuries.	Result.	Remarks and post-mortem.
1	Walters, Pittsburg.	22	10 hours	Signs of active peritonitis.	Much blood and urine; extensive tear at base of bladder.	Removal of foreign contents; drainage tube.	Recovered.	Catheter in bladder also.
2	W. T. Bull, An. of Surg., 1885, i, 67.	46	13 hours	Great shock; bloody urine; dulness half way to umbilicus; catheter went beyond bladder.	3¾ inch rent of posterior wall of bladder.	7 Lembert sutures. .	Died in 7 hrs.	Also had fractured pelvis.
5	Jos. M. Fox, Med. News, Dec., '87.	38	19 hours	Great pain about bladder and desire to micturate; bloody urine; great shock.	Much blood and urine; 2½ inch triangular rent in anterior wall of bladder.	15 Lembert sutures; soft catheter in urethra.	Died in 42 hrs.	No abdominal drain; post-mortem: bladder wound firm.
4	J. Duncan, Lancet, 1886, ii, 399.	38	22 hours	Shock; desire to urinate, but no power; bloody urine, peritonitis, vomiting.	Blood and urine; 2½ inch rupture of posterior bladder wall.	Glass drain sutured into bladder w'nd.	Died in 55 hrs.	Suppression of urine.
5	Wm. McCormac, Lancet, 1886, ii, 1118.	37	27 hours	Fluid present in abd.; signs incipient peritonitis; nausea.	Large amount bloody fluid; 3 inch rent upper portion of bladder wall.	12 Lembert sutures.	Recovered.	Urine passed voluntarily from first
6	McGill, Lancet, 1886, xxi, 972.	. . .	3 days.	Insensible for time; pain; bloody urine; could not urinate, though had desire; incipient peritonitis.	Pint of urine; 4 in. rent of apex & fundus of bladder.	11 sutures.	Died in 17 hrs.	Post-mortem: bladder wound firm.
7	C. Heath, British Med. Jour., '86.	Adult	40 hours	Tense belly; bloody urine by catheter; injected water felt through abdomen by patient.	Rent of bladder.	Continuous suture.	Died in 6 days.	Post-mortem: suture had given way.
8	Hofmokl, British Med. Jour., 1883, i, 560.	Adult	. . .	Principally those of extra-peritoneal rupture.	Intra- and extra-peritoneal rupture of bladder; great infiltration of tissue with blood.	Partial suture; upper portion left open and drained.	Recovered.	
9	MacCormac, Lancet, 1886, ii, 1118.	33	19 hours	95 oz. blood-tinged urine drawn; walked a mile to hospital day after injury.	4 inch median vertical rent of bladder.	16 Lembert sut.; peritoneum at sides divided to relax bladder walls.	Recovered.	
10	A. Willett, St. Bartholomew Hosp. Rep., 1876, 209.	48	20 hours	Shock & pain; bloody urine by catheter; later, symptoms of peritonitis.	3½ inch rent across fundus of bladder.	Interrupted sutures.	Died in 23 hrs.	Post-mortem: portion of w'nd found open.
11	A. W. M. Robson, MacCormac's Monograph, p. 53, 1887.	68	3 hours	Frequent desire but could not micturate; bloody urine by catheter; frac. right side pelvis; patient conscious, pulse feeble.	None found.	Peritoneal portion of bladder not involved.	Died in a few hours.	Post-mortem: abdom'l walls above bladder infiltrat'd with blood and urine; bladder torn and penetrated by fragm'ts of bone.
12	Socin and Keyser, Annals Surgery, Feb., 1887.	20	. . .	Reten. of urine; bloody fluid by cath.; pain above pubes; hiccough.	Extra-peritoneal half-inch rent of bladder; no involvement of peritoneal cavity.	Bladder sutured to abd'l wall; drain tube into cavity of bladder from above	Recovered.	Tube kept in 9 days.
13	Sonnenburg, Centralbl. f. Chirurgie, 1885, 838.	. . .	2 days.	Clear urine by catheter; signs of peritonitis began in 24 hrs.	Rent from vertex to neck along posterior wall.	No sutures; drain tube into bladder from above.	Died on 4th day	Intense peritonitis after operation.

TABLE 3—RUPTURED BLADDER—*Continued.*

Case.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal Injuries, etc., found.	Treatment of intraperitoneal injuries.	Result	Remarks and post-mortem.
14	C. J. Symonds, Trans. Clin. Soc. London, '88, xxi, 228.	F. 7	7 hours	Great collapse; great pain in epi- but none in hypogastric reg'n; blood-streaked vomit; pain over bladder began 7 hours after injury; percussion dulness to umbilicus; almost pure blood by catheter.	Y-shaped rent in vertex of bladder, partly intra- and partly extra-peritoneal; pelvic peritoneal cav. full of blood and urine.	Rent united by 12 Lembert sutures; 2,7 pints blood and urine sponged out; no drain.	Died in 7 days.	Post-mortem suppurative peritonitis; wound had leaked, 2 days after operat'n wound had been opened and belly irrigated; urinary discharge thro' same from then till death.
15	T. P. Teale, MacCormac's Mono., 1887, p. 54.	25	2 hours	Kicked in abdomen; pain in hypogastrium; inability to micturate; no shock; subsequently tympanitis and percussion dulness over flanks.	Intestines floating in large quantity straw-colored fluid; vertical 1 inch rent of fundus.	Abdomen cleared of urine; Lembert sutures to rent, drainage by tube thro' perineum	Died in 19 hrs.	Secondary hæmorrh from perineal w'nd; no peritonitis.
16	W. J. Walsham, Lancet, '88, i, 173.	21	13 hours	Little or no shock. . .	Rent of bladder 1½ inches.	Rent closed by nine Lembert sutures; no drain.	Recovered.	
17	Halstrom, Lancet, June 28, 1888.	21	13 hours	No shock	Rent 1½ inches long	9 Lembert sut.; catheter first day; no drain; boracic irrigation.	Recovered.	
18	T. Holmes, Lancet, July 23, 1887.	24	6 hours	Abdom'l pain; blood-tinged urine by cath.; point of catheter felt in abdominal cavity.	2-inch rent	8 Lembert sutures; no drainage.	Recovered.	
19	E. L. Keyes, N. Y. Med. Rec., Dec. 24, 1887.	22	22½ hours	Some bloody urine by catheter; incipient peritonitis.	Rent 1½ inches backward. .	9 Lembert sutures; permanent catheter; glass abdominal drain.	Died in 18 hrs.	Post-mort.: death from shock and alcoholism.
20	H. H. Grant, Jour. Am. Med. Ass'n, July 28, 1888, 118.	19	5 hours	Shock; bloody urine by catheter; bladder collapsed.	2½ inch rent; fracture horizontal ramus near pubis.	11 Lembert sutures; rubber drain; irrigation.	Recovered.	Catheter used every 2 hours subsequently
21	H. O. Hitchcock, Pittsburg Med. Rev., Mar., '88, 55	34	18 hours	Shock; free fluid in abdomen; could not micturate; 11 pints bloody urine by catheter; no peritonitis.	Rent 2 inches, ...	Sutures; apposition not entirely accomplished; irrigation; no drain.	Died on 2d day.	Permanent catheter.
22	H. F. Stanton, Indian Med. Gaz., Jan., 1889, 22.	Adult	50 hours	Patient unable to lie down; had been kicked in abdomen.	Extensive tear of posterior wall.	Lembert sutures . .	Died in 24 hrs.	No other details. . . .
23	A. Blum, Archiv. gén. de Med., July, 1888, p. 5.	Adult	24 hours	Horse kick of abdom.; could not micturate; much clear urine withdrawn by cath.; no signs of ruptured bladder; operation undertaken for peritonitis.	1-inch tear of fundus; much straw-colored, clear serum in peritoneal cavity; bladder wound edges not infiltrated with blood.	10 Lembert sutures; no bladder wound; abdomen cleansed; permanent drain.	Recovered.	Cystitis on 13th day. .
24	W. H. Brown, Lancet, Aug. 4, 1888, 208.	20	11 hours	Horse fell upon him; peritonitic decubitus, distended abdomen; pure blood by cath.; great pain; inability to pass urine.	Rent posterior wall far forward; bloody fluid in peritoneum.	Abdomen irrigated; abd'l drain; catheter in bladder; wound inaccessable to suture.	Died in 11 hrs.!	No post-mortem . . .
25	H. O. Hitchcock, Pittsb. Med. Rev., 1888, 55.	34	36 hours	Passed bloody urine; fluid in, and distension of, belly; some shock; 11 pts. bloody urine by catheter.	Bifid rent, 6 inches long, of posterior portion of fundus.	Lembert sutures to tear; abd. cleansed; catheter tied in.	Died in 20 hrs.	Never recovered from shock.
26	C. K. Briddon, N. Y. Med. Journal, March 9, 89.	Adult	3d day.	Intense pain in abd'n and head of penis; retraction of testes; no blood in urine except at one time signs of peritonitis.	Rent in posterior wall of bladder; several pints of bloody fluid in cavity.	Rent sutured	Died in 14 hrs.	No post-mort. record.
27	R. Morrison, Brit. Med. Jour., Jan. 26, 1889.	25	. . .	Great collapse; distended cystitic bladder had given way to slight traumatism; signs of peritonitis.	¼-inch rupture of pouch between ribs of bladder in upper posterior portion.	Rent sutured	Died in 4 days.	Died of peritonitis . .

TABLE 4.—RUPTURED OR CONTUSED ABDOMINAL VISCERA.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal Lesions, etc., found.	Treatment of intra-peritoneal injuries.	Result.	Remarks and post-mortem.
1	Bouilly, Bull. et Mem. Soc. de Chir., 1883, 690.	29	23 hours	Signs of incipient peritonitis; fæcal vomit'g.	3-inch rupture of small intestine; also gangrenous bruise of intestine above rupture.	Resection 5 inches small intestine.	Died in 10 days.	Post-mort.: gangrenous portion had given way after manipulation.
2	Chevasse, Ib., 1885, 123.	23	. . .	Shock at first, then peritonitis.	Colon badly contused in two places; intest. and meso-colon infiltrated with blood.	None	Died in 6 days.	
3	E. A. Waggoner, St. Louis Cour. of Med., 1886, xvi, 204.	8	27 hours	Walked 400 yards; great shock, followed by violent peritouitis.	Rupture of intestine 2½ feet above ileo-cæcal valve; much fæces.	Sutured	Died in 2 hrs.	
4	T. M. Girdlestone, Australian Med. Journal, 1883.	22	4th day,	Shock, which was followed by development of peritonitis; vomit'g.	Almost complete rupture of ileum; tears of omentum.	Excision of wounded bowel.	Died in 1½ hr.	
5	Fitzgerald, Ibid, 1883, 264.	58	20 hours	All sigus of double strauglated hernia. (His truss had been pressed violeutly against descended hernia.)	Ruptured small intestine.	Sutured	Died in 8 hrs.	
6	Dixon, Annals of Surg., v, '87, 321.	32	7 days.	Fell down elevator; profound shock, vomit'g, intense pain in back, loins, and over right hypochondrium; fracture 10th dorsal vertebra; later, rise temperature, moderate tympanitis, and slight enlargement and dulness over cæcal region; aspirator needle brought fluid like bile.	Gall-bladder ruptured and collapsed; infiltration of much bile along posterior border of ascending colon.	Cystic duct ligated and gall-bladder dissected out by knife and cautery; adjacent tissues sutured over stump.	Died in 17 days.	Increasing icterus and diarrhœa after operation; some adhesions in peritone'm; obstruction of common duct by impacted gall-stone.
7	M. Chauvel, Le Progrès Médical, Mar. 7, '85, 193.	. . .	3 days.	Kicked in abdomen by horse; three days afterwards signs of general peritonitis.	Transverse meso-colon and right half pancreas contused.	Not mentioned . . .	Died 7 days af. injury.	Abd. simply opened; lesions only found post-mortem.
8	J. Croft, Lancet, 1887, i, 915.	34	24 hours	Abdom'n stamped upon; shock; peritonitis.	Rupture lower portion of ileum extending thro' ¾ths of its circumference; extravasation of fæces.	Abdomen cleansed; wound of ilium sutured to abdominal wound; time, 1½ hours.	Recov.	Died 29 days later of shock after operat'n for artificial anus closure lasting 2½ hours.
9	J. Croft, MacCormac's Monogr., 1887, p. 55.	25	13 hours	Run over by cab; pain and much shock; signs of internal hæmorr.; fluid in flanks.	Ruptured spleeu; fractured 8th and 9th ribs; 2 pints of free blood in cavity.	Spleen excised; abdomen cleansed.	Died in a few hours.	Never recovered from shock. Post-mort.: clc'sin renal vessels.
10	Demons, Cong. F. de Chirurg., 1885.	Adult	. . .	Crushed bet. cart wheel and wall.	Circular rupture of intestine.	Lembert sutures to bowel wound; cavity "purified."	Died.	Post-mort.: a second overlooked rupture of bowel found.
11	Gregory, MacCormac's Monogr., 1887, p. 56.	. . .	. . .		Rupture of ileum.	Suture of bowel wound.	Died.	Operation not undertaken until hope had been practically abandoned.
12	A. O. Mackellar, MacCormac's Monogr., '87, 56.	57	29 hours	Struck by shaft of cart; collapse, pain, signs of internal hæmorrhage; dulness in flanks.	Rupture of spleen; fracture of rib; much altered blood.	Irrigation drainage.	Died on 3d day.	Operation not undertaken until marked peritonitis present. Post-mort.: rupture of kidney also.
13	Edmund Owen, Lancet, ii, 1885.	Adult	41 hours	Fell across board placed edgewise; shock; peritonitis.	One-inch rent of ileum. .	Intestine clamped and artificial anus formed.	Died 8 hrs. af. oper'n.	No post-mortem. . . .
14	Alf. Willett, MacCormac's Mouo., 1887, 56.	32	Soon.	Fell four feet upon back; immediate epigastric pain and collapse; bowels acted freely, vomiting incessant; emphysema & crackling round umbilicus.	Cavity full of blood; rupture of right lobe of liver extending from hilus.	Several pints blood withdrawn.	Died 4 days af. oper'n.	Post-mortem: large branch of portal vein torn.
15	Atkinson, British Med. Jour., 1888, i, 357.	28	9 hours	Fell against edge of table; some collapse; abdomen retracted; vomiting.	½-inch rupture of ilium near duodenum; bloody fluid; marked peritonitis.	Wo'd closed by Lembert sutures; boracic irrigation, glass drain.	Died.	Belly reopened following day and abdom'n irrigated again.
16	McBurney, N. Y. Med. Jour., Jan. 26, 1889, 106.	12	8 hours	Fell across railroad rail; profound shock; pain in back. Later, abd. flat, dulness in flanks; shock improving.	Quart of free blood; extravasations about colon and omentum; branch of pancreato-duodenal artery ruptured and bleeding.	Vessel ligated, abdomen cleansed.	Recov.	
17	W. Mayo Robson, Proc Clin. Soc. London, '88, 122.	24	48 hours	Continuous vomit'g and other sigus of peritonitis; condition bad.	¼-inch rent of small intestine thro' serous and muscular coats only; also a complete rupture of small bowel with great extravasation of fæces.	Lembert sutures to partial rupture, artificial anus made of other wound; drain, irrigation.	Died 2 hrs. af. oper'n.	Post-mortem: rupture was 2 feet below pylorus; diffuse purulent peritonitis.
18	C. K. Briddon, N. Y. Med. Journal, June, 1889.	39	30 hours	Hit in abdomen by pole of wagou; great pain, shock, and signs of hæmorrhage at first; great distension of abdomen at time of operation.	Small rupture of ileum leading into mesentery; much free blood; hæmorrhage still going on; great extravasation of fæces.	Suture of wounds, ligation of arteries, incisions and subsequent suture of intestines to allow escape of gas; irrigation, drain.	Died in 20 hrs.	Post-mort.: pint blood from overlooked bleeding intestinal artery; peritonitis.

THE CLINIC.

CLINICAL LECTURE UPON DISEASES OF WOMEN, JEFFERSON MEDICAL COLLEGE HOSPITAL, OCTOBER 29, 1889.

BY THEOPHILUS PARVIN, M.D.,

PROFESSOR OF OBSTETRICS AND OF THE DISEASES OF WOMEN AND CHILDREN IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA, PA.

[Reported by Dr. Edward E. Graham for THE JOURNAL.]

Gentlemen:—The first patient presented you to-day is one upon whom I did a laparotomy three weeks ago for ectopic gestation. It was a case of tubal pregnancy; that is to say, the gestation cyst occupied one of the tubes. This patient was nursing at the time certain symptoms pointed to a new pregnancy, and as she herself said, she would have believed herself pregnant if she had not had for several days a discharge of blood from her womb, which she believed was the monthly flow. But the flow lasted longer and was more profuse than usual, and finally at two different times pieces of membrane, probably the decidual membrane, were discharged. She had a painful and growing tumor near to the uterus upon the left side. She had been an out-patient of the Pennsylvania Hospital, where my friend Dr. Baldy saw her two or three times, and finally made the diagnosis of ectopic gestation as most probable. She was taken one day with very severe pain at home, and sending for her family physician, Dr. Orville Horowitz, he advised her immediate removal to this hospital. The operation was done the next morning after her arrival. A drainage tube was introduced after the removal of the enlarged oviduct and the ovary, and after thorough washing out the peritoneal cavity, the tube was removed at the end of forty-eight hours, and as you now see upon exposure of the abdomen, the incision, only about 3 inches long, has entirely healed. A woman after an abdominal section should remain in bed for at least three weeks, lest perfect and firm union of the incision fail, and a hernia result. More than once I have allowed patients to get up after a much shorter confinement to bed, and a hernia has been the consequence.

Case 2. Increase of Fat in the Abdominal Wall Simulating a Tumor.—The next patient is 45 years old, is married, and has given birth to two children. She has observed during three years a constant increase in the size of the abdomen, and fears that she has "a tumor;" she comes here to have this question settled. Upon palpation no tumor can be felt, but placing a hand upon each side of the abdomen, the ulnar border being below, and my back turned towards the woman's face, I endeavor to approximate my hands; you see that they include a great mass of tissue quite outside the abdominal cavity, and that this cavity is not at all enlarged. The apparent tumor is not in the usual sense of the term a tumor, not a neoplasm, but simply due to a great accumulation of fat in the abdominal wall. This condition is sometimes spoken of as a pendulous abdomen, but it is only the anterior abdominal wall which is pendulous. When she is sitting this hanging wall rests upon her thighs, and in walking too it is an inconvenience. Probably she would be made more comfortable by wearing a suitable bandage, not necessarily one made by those dealing in bandages, but such a one as any ingenious woman can fashion for herself out of strong unbleached muslin or cotton drilling. Such bandage will be less expensive, and probably as useful as one bought at the shops.

Case 3. Cystitis in Pregnancy.—This patient is 18 years old, is married, and ten months ago was delivered of a living child. In the third month of her pregnancy she began to suffer with frequent and painful micturition; she had to empty the bladder ten or twelve times daily, and several times each night. The disorder then beginning has continued until now. A specimen of the urine is shown you; it is cloudy, alkaline, and its specific gravity is 1016. Examination with the microscope shows a large quantity of epithelium and of pus.

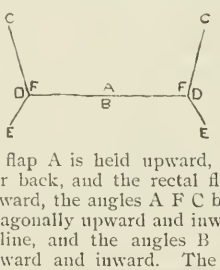
Cystitis in pregnancy, while not frequent, certainly is not rare; just as there has been described a pregnancy nephritis, so there is a pregnancy cystitis, only the latter is much oftener seen than the former. In an interesting monograph upon cystitis in woman by Monod, published a few years since, he found twenty-six out of 124 pregnant women who suffered with vesical disorder early in pregnancy, and of the twenty-six, sixteen were primigravidæ. He attributes the cystitis of pregnancy chiefly to hyperæmia of the bladder caused by the close vascular connections between this organ and the uterus, the latter necessarily having its blood supply vastly increased. But in addition to this he considers sexual intercourse, frequently in the newly married excessive, as contributing to cystic inflammation. We do not now consider those grave cases of cystitis consequent upon retroversion or retroflexion of the pregnant uterus after it has become incarcerated, spontaneous evacuation of the bladder being impossible it becomes enormously distended, and sloughing with a fatal result may follow.

In regard to the treatment of cystitis in the female, I believe that you may very well dispense with medicines administered by the mouth for the purpose of action upon the vesical mucous membrane by being eliminated through the kidneys; but you will find the most important and prompt means of cure in washing out the bladder by means of suitable solutions or mixtures. This irrigation should be done with Hegar's funnel, to which a rubber tube and catheter are attached,

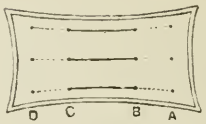
and which is now shown you. The funnel, tube and catheter are filled with the preparation selected, and the funnel held so low that the fluid will not escape through the catheter previous to the introduction of the latter. Introduce the catheter, then raise the funnel, and the fluid passes into the bladder gently, without the least violence. After having had a sufficient quantity enter, lower the funnel, and the bladder is at once emptied. What shall be used for the injection? Braxton Hicks advocates slightly acidulated warm water, 1 or 2 drops of hydrochloric acid to the fluid oz. of water, for example. Recently I have been using a mixture of creolin and water, and the results have been very good. I first tried a 2 per cent. solution, but a mixture this strong will in many patients cause great suffering; it seems to me, therefore, better to begin with a mixture only half as strong, or even one still weaker. Remember when you irrigate the bladder to use the solution or mixture warm.

Case 4. Operation for Partial Rupture of the Perineum.—The next patient has a partial rupture of the perineum, and as you observe the tear which extends half-way back to the anus, you will see that there is also a condition which you frequently meet with if the injury is chronic, a prolapse of the recto-vaginal wall, that is a rectocele or proctocele. The operation which will be done is known as Tait's, after the distinguished Birmingham surgeon, Lawson Tait. I think the operation will be better understood and appreciated by giving Mr. Tait's words and using two of his diagrams in its description:

[1] "Having the folds of the buttocks pulled firmly apart, so that the cicatrix is put on the stretch, I enter the scissors at its extreme end on one side, and keeping strictly to its line, I run through to its other extremity. The incision is about $\frac{3}{8}$ of an inch deep, and it forms two flaps, a rectal and a vaginal. From each end of the incision it is carried forward into the tissue of each labium for about 1 inch, and again backward for about $\frac{1}{3}$ of an inch, making a wound like this—



The vaginal flap A is held upward, the patient being on her back, and the rectal flap B being turned downward, the angles A F C being pulled by forceps diagonally upward and inward toward the middle line, and the angles B D E being pulled downward and inward. The lines C E thus become straight, and the wound takes this form—



"By means of a stout-handled and well-curved needle the silkworm gut sutures are entered on one side about $\frac{1}{8}$ of an inch within the margin of the wound, so as not to include the skin, at the dots A. They are buried deeply in the tissue as far as B, and then the needle is made to emerge so as to miss the angle of the wound. The needle again enters at the large dots C, and emerges at the dots B. By thus missing the upper or deep angle of the wound between B and C, the two great and divided masses of the old perineum, which lie in the parallelograms respectively bounded by the lines of large dots A—B and C—D, are respectively adapted. The rectal and vaginal flaps respectively point into the rectum and vagina, and like an old-fashioned flap valve prevent noxious material entering the wound. The resulting mass of perineum is amazingly large; union is almost inevitable, for I have failed only twice in many hundreds of cases, and then because there had been previous denuding operations. The resulting cicatrix is absolutely linear, and so resembles the natural *raphé*, that in three or four months after the operation it is quite impossible to determine, from the appearance of the parts, that the perineum has ever been injured, for there are no stitch-holes left to tell the story. The pain after the operation is trifling compared to the old method of quilled or shotted sutures. I leave the stitches in for three or four weeks, and take great care that the rectum and vagina are washed out twice daily."

I believe this method of operating is much to be preferred in most cases of perineoplasty. Its rapidity of performance, its simplicity, its firm foundation in just reason, and the satisfactory results in Mr. Tait's hands commend it, and I believe the day is not distant when the story of shotted wires and the quill sutures will be only of interest in antiquarian societies.

Case 5. Uterine Fibroids.—This patient is 45 years of age, married, and has given birth to two children: her labors were tedious and difficult, and each was ended by the forceps, and followed by pelvic inflammation requiring confinement to bed for several weeks. Six years ago the menopause occurred, and for two years she had excellent health, but for the last four years she has been subject to attacks of hæmorrhage from the womb, and while the loss of blood has been at no time excessive, yet its frequent recurrence has caused much weakness. Do not fail to observe

[1] This description, given by Mr. Tait, is found in the third edition of H. Macnaughton Jones' Practical Manual of Diseases of Women, London, 1888. The author of the Manual, by the way, strongly endorses the method.

the important fact that fibroids of the uterus, for the patient has several of these tumors, do not always shrink, atrophy, and cease to give trouble when the menopause is established. So usually is such the favorable result that one of the accepted methods of treatment of a patient suffering from hœmorrhage consequent upon such growths, is to anticipate nature's menopause by making an artificial one, removing the uterine appendages so that menstruation will cease. But what possible good would follow removal of the tubes and ovaries in this case?

These tumors begin in the uterine wall, oftener in the posterior than in the anterior, usually in the body, very rarely in the cervix, and according to the predominance of muscular tissue in their structure are known as myomata, of fibrous tissue as myo-fibromata or fibroids. These tumors are rarely solitary, but usually three or four or a larger number will be found. In the case of this patient I can by bimanual examination recognize four which have grown toward the peritoneal cavity, while probably there is only one which has become submucous, and is the source of the bleeding from which she suffers. Various remedies have been given this woman internally with little or no benefit. What those remedies are I do not know, but it would be well to try the fluid extract of hydrastis Canadensis, twenty drops four or five times a day, and she is so wretchedly anæmic I would like her to have twenty drops of the muriated tincture of iron twice or thrice daily. But something must be done immediately to arrest the hæmorrhage. Let me try the following treatment, a treatment which you will sometimes find quite useful: First dilate the cervix, then curette that portion of the mucous membrane at which the tumor is projecting, this curetting being followed by the application of Churchill's tincture of iodine, or of a solution of one of the iron salts mixed with glycerine.

Case 6. Primary Cancer of the Vagina.—The patient, who is forty-six years old, gives the following history: She was married when twenty-five years old, and has given birth to eight children, has had good health until about eight months ago when a profuse leucorrhœa was observed, followed in two months by occasional hæmorrhages from the vagina, and more or less local distresses; she has severe pain in the groins, extending to the sacrum, and almost constant "back ache"; she has been losing flesh, and her strength has been failing. Upon examination there is found occupying at least two-thirds of ths posterior wall of the vagina a vascular growth easily broken down, and presenting irregular prominences and fissures. The cervix and the vulva are quite free from disease, and therefore the affection has not extended from either to the vagina, a very common, almost constant occurrence alike in cancer of the external genitals or of the vaginal portion. Hence the disease is primarily vaginal, involving only the vagino-rectal wall. A piece of the growth was removed for examination with the microscope, and Dr. Coplin reports that it is undoubtedly cancerous. Primary cancer of the vagina is a very rare affection. Breisky, in a paper upon the subject written a few years ago, refers to only twenty-four cases of such disease having been reported up to that time. But there is a large number of unreported cases, so that the disease is less rare than Breisky's statement would indicate; Dr. Hearn, for example, who is present, tells me that he met with a case a few years since. The posterior wall of the vagina is more frequently affected than the anterior. The majority of the patients were between thirty and forty years of age, though the disease has occured at sixteen and at sixty.

From the nature of the tissues involved vaginal cancer has a rapid course. Only when the disease is discovered almost in its very commencement is there any hope from treatment; then complete extirpation being done, a temporary cure is accomplished. But in this patient it is utterly impossible to remove the entire diseased mass. Therefore only palliative treatment will be attempted—the patient's comfort will be increased somewhat, and possibly death will be delayed. Let as much of the disease be removed as possible, and this removal will be made by the galvano-cautery knife, with Simon's spoon, and by a preparation of bromine. The first is an excellent means theoretically, but often failing in practice; the operation is comparatively bloodless, but before you have completed it the electric current ceases. (This happened in the case, and Simon's spoon was substituted.) The blood soon obscures the field of operation when the spoon is being used, and to arrest the flow it is well to apply to the wound a mixture composed of one part of bromine, two of iodine, three of carbolic acid and four of alcohol; applying this mixture by means of cotton, the bleeding is arrested, and the use of the spoon is resumed. After removing as much of the diseased growth as possible, a pledget of cotton dipped in the solution mentioned is left upon the surface, and this surrounded and covered by pieces of cotton dipped in a bicarbonate of soda solution so that the caustic may not extend its action to adjacent healthy tissue. The tampon thus occupying the vagina will be removed at the end of two or three days, and then an antiseptic injection be used twice a day. (There was an improvement for a few weeks, but it was only temporary; the patient left the hospital in search of her truant husband, and very soon returned to say that she was suffering as much as, if not more than before the operation, and her general health showed still greater deterioration.)

MEDICAL PROGRESS.

PREVENTION OF TUBERCULOSIS.—At a recent meeting of the German Public Sanitation Association PROF. HELLER introduced the subject of the prevention of tuberculosis. He believes that tuberculosis is to be regarded as the most important of all diseases in that it furnishes the largest mortality of all causes of death. It is also the most important from the standpoint of social science, because its victims die after a long illness, during which their earning capacity is lessened or destroyed, while during life they are a constant menace to their fellows. From microscopical preparations Heller estimates the number of tubercle bacilli in the sputum of a tubercular subject at 1,000,000 per cubic centimetre; in a single expectoration, on an average, 3,000,000 bacilli are discharged. The control of tuberculosis should be urged most vigorously by State and community; such warfare promises a very important diminution, if not complete extermination of the disease. Koch's bacillus is the cause of the disease; its appearance outside of the animal organism has not been proved, although it is able to preserve its infective properties for a long time. The bacillus of tuberculosis may be acquired (*a*) by transmission, though this is of minor significance; tuberculosis has never been observed in the new-born; the earliest age at which it has been observed is nine weeks after birth, the interval which is necessary for the outbreak of the disease after infection has taken place; (*b*) by direct or indirect conveyance from other tubercular human beings; the chief source of infection is the sputum; (*c*) by direct or indirect conveyance from tubercular animals, especially by their milk and by such parts as serve for food.

As measures to be taken against the spread of tuberculosis mention may be made of the disinfection of the sputum in schools, regular cleaning with water and frequent disinfection of the school rooms; the erection of disinfecting stations throughout the community, with the instruction of people regarding the technique of disinfection; repeated disinfection of dwellings and the utensils of tubercular invalids; the enforced disinfection of dwellings and effects of those who have died from tuberculosis; attention to the health of wet-nurses, midwives and attendants upon the sick; the supervision of those who are engaged in the preparation and sale of food stuffs, with the exclusion from such employments of coughers; the careful hygiene of hospitals, prisons, orphan asylums, and all similar institutions; the instruction of the populace; the strict enforcement of meat inspection; attention to breeding of tubercular animals; the inspection by veterinaries of the stabling where tubercular animals are found; the destruction of all animals found to be tubercular, with at least partial compensation to owners; the inspection of milk depots.

After the discussion a resolution was adopted by the Association, which recommended the earnest attention of the State and municipal authorities to the above rules of prevention.—*Wiener Med. Woch.*

TREATMENT OF LOCOMOTOR ATAXIA.—BENEDIKT reports a case of locomotor ataxia which, when admitted to his services, presented a marked degree of amblyopia and amaurosis, together with such a degree of ataxia that the patient could not stand, even with the assistance of two persons. After various attempts with hydropathic and electrical treatment, Benedikt stretched both sciatic nerves and the patient was soon able to walk alone, with the assistance of a cane. This case confirms a law formulated by Benedikt twenty-five years ago, to the effect that cases of tabes with prodromic atrophy of the optic nerve have a favorable prognosis as regards the ataxia. Bendikt also reports a case of locomotor ataxia treated by suspension. The patient has submitted to forty suspensions of two minutes each. Pain has almost disappeared, and the ataxia is greatly improved, the patient being able to stand erect even with his eyes closed. In this case, as in all cases of syphilitic origin, the ataxia is atypical. Benedikt maintains that the majority of patients afflicted with locomotor ataxia and progressive general paralysis have never been the subjects of syphilis.—Vienna correspondence *La Sem. Méd.*

TREATMENT OF SPASTIC INFANTILE HEMIPLEGIA.—BENEDIKT reports two cases of spastic infantile hemiplegia. Cases of hemiplegia which affect the type of apoplexy or cerebritis give a favorable prognosis when not complicated with symptoms of motor excitement. In cases where such symptoms do exist treatment of one extremity is capable of producing a favorable effect upon the functional activity of the entire organism. In spastic infantile hemiplegia which gives a grave prognosis, the patients are not able to use the affected extremity; furthermore, choreic movements of this extremity prevent functional activity of the other. In the two cases above referred to by Benedikt nerve stretching was adopted, in the first the radial and cubital were stretched, in the second the cubital and median. The results of this operation were complete cessation of the choreic movements. In the first case the improvement has lasted five and one-half years.—Vienna correspondence *La Semaine Méd.*

QUINSY.—In the early stages of quinsy, chloral hydrate is nearly a specific, three or four grains to the ounce of glycerine being used as a gargle. It is locally antiseptic, astringent and sedative.—*Medical Record.*

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SATURDAY, JANUARY 4, 1890.

THE SUSPENSION TREATMENT.

A little over a year ago CHARCOT made his first trial of suspension in the treatment of locomotor ataxia, the idea being given him by DR. RAYMOND, of the Paris Faculty, who brought it back from a trip into Russia. In January, 1889, he published his observations (*Prog. Méd.*), and to-day all over the world this proceeding is being employed on thousands of cases of the most widely varying nature, and often in the most hap-hazard and even reckless manner. MOTCHOUKOWSKY, Physician to the Odessa Hospital, who accidentally hit upon this plan of treatment through observing amelioration of subjective symptoms in a tabetic suspended with the Sayre apparatus for the application of orthopædic appliances, published in 1883 (*Vratsch*) seventeen cases so treated with favorable results in twelve, and made moderate claims for the value of the method. It became generally known, however, only a few months ago when the endorsement of Charcot gave it at once wide celebrity and secured it an extensive trial. This is one of the incidents which well demonstrate the present international character of medical science and at the same time the deserved potency of a master mind.

The results as reported are often conflicting and of necessity, in this short period of probation, usually premature and unreliable. The category embraces advantages gained and accidents incurred, patients restored and patients made worse, while cures and even fatalities are not lacking. On the whole commendation of the method prevails.

An empirical proceeding at the start, its *modus operandi* is as yet unknown, its position in the scale of usefulness undetermined. Some points have been made plain, however, not the least important of which is a degree of danger associated with its employment. Among important results directly attributable to its use are brachial palsies, temporary spastic contractures, fracture of the maxilla, alarming syncope, cerebral hæmorrhage and sudden death. Those employing suspension for orthopædic purposes often encounter patients who cannot tolerate the traction and position. These things point with no uncertain index to the necessity for precaution and care in selecting cases and applying this treatment. BLOCQ, a pupil of Charcot, points out a number of contra-indications to its use (*Bull. Médical*, January, 1889). Danger, according to this observer, is present in extreme weakness from any cause, and particularly when a considerable degree of anæmia is associated. Patients presenting œdema or obesity, those suffering with impaired respiratory or circulatory organs, as in emphysema, atheroma, enlarged heart, valvular mischief, previous apoplexy, etc., are not fit subjects for this treatment and liable to serious consequences from its employment. To these may be added those presenting kidney disease or active spondylitis. As yet it is not determined what conditions of the nervous system *per se* exclude this manœuvre.

It was determined by Motchoukowsky and confirmed by others that suspension of the dead body causes a lengthening of the vertebral axis, including the head, of from 3 to 5 centimetres. As the spinal cord floats somewhat freely in its canal it is doubtful that any appreciable tension is brought to bear upon it, and probable that such as may be exercised is expended upon the spinal nerves in the intervertebral foramina. Indeed, stretching of sciatic nerves for the benefit of ataxia, both by the passive flexion of the thigh on the body and by cutting operations, dates back to 1872 (Nussbaum), and improvement sometimes follows the proceeding. It may therefore be supposed that the nerve stretching brought about by suspension is an important factor, even should it not act directly upon the diseased elements of the cord.

Some suggestive experiments have just been

reported before the Italian Medical Congress by DR. LOMBROSO (*Sem. Médicale*, October). He suspended a number of rabbits in two series. In one a weight was attached to the body of the rabbit sufficient to make up the proportion of body to head weight as found in man, and these all succumbed after an average of ten suspensions. In each instance small meningeal hæmorrhages were found, particularly in the coverings of the cord, and the gray matter presented minute extravasations and engorgements most marked about the central canal of the spinal cervical segments. The rabbits suspended without the extra weight were not seriously affected and when examined presented no similar lesions. It is difficult to apply to man deductions made from such experiments on small animals, especially when natural conditions of body weight are changed, but we may here possibly see a reason why obese and œdematous patients stand the operation so badly. There can be no doubt that suspension increases arterial tension, as is shown by the engorged face, the rapid hard pulse, the quickened respiration, the frequent tendency to vertigo and the sphygmographic trace. It is probable that the temporary artificial hyperæmia of the nervous centres is an important element in producing the sometimes almost instantaneous improvement of subjective symptoms. It has been urged that suggestion and mental impression might account for this, but the improvement is not confined to the subjective features alone. The eye signs, the incoördination, the ability to stand and walk in a straight line with closed eyes, the cutaneous sensibility, the sexual power, the body weight, and even the patellar reflex, are modified for the better in certain cases.

In carrying out this procedure a number of practical points and safeguards are suggested by various reporters. The patient's sensations and condition should be the criterion for its continuance. Some tolerate three or four minutes of suspension from the beginning, while others can endure but a few seconds. The best results seem to be obtained by suspensions of not longer than five minutes repeated not oftener than on alternate days. At first, if not always, it is better that a sitting position be allowed the patient. In this way the treatment is less terrifying, gives better control of the subject, can be instantly discontinued, and possibly the flexion of the thighs serves to fix the lower end of the cord, while the diminished weight is an item on the side of safety. By using a spring scale the exact amount of traction can be observed and accurately modified and recorded. With this addition to the apparatus the treatment can be intelligently and tentatively undertaken, and the amount of force employed gradually and equably increased, but more than that equal to a moderate body weight for each patient is scarcely desirable or advisable. When suspension is partly made by the axillary bands, owing to the indirect attachment of the upper extremities through the shoulder girdle to the vertebral axis, the weight so supported is practically deducted from the force applied to the extension of the spinal column. In the sitting position they may better be omitted, simplifying and making more exact the application of the extending force and removing a source of danger to the axillary contents. The bands should be so arranged that any twisting or over-extension of the head is not produced. If the teeth do not properly articulate or are in part wanting an interdental splint may be fashioned, or sometimes a roll of cotton wool will answer the purpose. The predisposition to fracture in tabes makes this precaution an important one.

The inefficacy of all former treatment of organic disease of the cord, the promises held out by suspension and the indorsement it has received in high places, make it the more desirable that it should have a thorough trial, be deprived as far as possible of danger, and employed with unusual circumspection and precaution.

FUNDAMENTAL MEDICAL STUDIES.

The printed account of the opening exercises at the Clark University of Worcester, Mass., on October 2, 1889, has just been received. The notable feature of the occasion was the address of the President, DR. G. STANLEY HALL, an address which is a most carefully composed plea for the profound German type of university education. Dr. Hall is an able exponent of the modern idea of laboratory research and of an elaborate preparation and foundation for medical study. That which he would require in the way of preliminary training would close the doors of the medical profession against four-fifths of our would-be practitioners, and would shut half our medical

colleges for lack of patronage. The thoroughness of the new idea is illustrated in the following extracts:

Biology explores the laws of life upon which not only these studies but human health, welfare and modern conceptions of man and his place in nature so fundamentally rest. The law of the specific energy of nerves, *e. g.* which Helmholtz says equals in importance the Newtonian law of gravity, and more than anything else made physiology the science which has had so large a share in raising the medical profession in Germany to a position in the intellectual world such as it never had before, doing for it in some degree what chemistry has done for dyeing, and even instruments like the ophthalmoscope, which almost created a department of medical practice, or the spectroscope, now indispensable in the Bessemer process, sugar refining, in wine and color-dye tests, the detection of photographic sensibilators, in the custom house and in two important forms of medical diagnosis --all these, to cut short a long list of both epoch-making laws and important instruments, are the direct products of whole-souled devotion to unremunerative scientific research.

It is hard for medical students to realize that they can not understand hygiene, forensic medicine, pharmacology and toxicology without a rigorous drill in chemistry; that they must know physics to understand the diagnostic and therapeutic use of electricity, ophthalmology, otology, the mechanism of the bones, muscles, circulation, etc.; that zoology is needed to teach sound philosophic thought, generic facts about the laws of life, health, reproduction and disease. These, and sometimes also sciences like mineralogy, anthropology and psychology, are required in Europe, with much more rigor than is common with us, of every medical student. Thus doctors, like technologists, can not know too much pure science. An eminent medical practitioner in Europe compares young physicians who slight the basal sciences of their profession and pass on to the clinical, therapeutical and practical part, to young men who grow prematurely old and sterile The young man who has had the invaluable training of abandoning himself to a long experimental research upon some very special but happily chosen point was typically illustrated in a man I knew. With the dignity and sense of finality of the American senior year quick within him, his first teacher in Germany told him to study experimentally one of the score of muscles of a frog's leg. He feared loss and limitation in trying to focus all his energies upon so small and insignificant an object. The mild dissipation of too general culture, the love of freedom and frequent change, aided by a taste for breezy philosophic romancing, almost diverted him from the frog's leg; but as he progressed he found that he must know in a more minute and practical way than before—in a way that made previous knowledge seem unreal—certain definite points in electricity, chemistry, mechanics, physiology, etc., and bring them to bear in fruitful relation to each other. As the experiments proceeded through the winter, the history of previous views upon the subject was studied and understood as never before, and broader biological relations gradually seen. The summer and yet another year were passed upon this tiny muscle, for he had seen that its laws and structure are fundamentally the same in frogs and men; that just such contractile tissue has done all the work man has accomplished in the world; that muscles are the only organ of the will. Thus, as the work went on, many of the mysteries of the universe seemed to center in his theme.

President Hall rather impatiently remarks that while the material progress of this country has been remarkable, the higher education, including that in medicine, has been falling behind.

It has been estimated that but 5 per cent. of the practicing physicians of this country have had a liberal education, and that 60 per cent. of our medical schools require practically no preliminary training whatever for admission, while European laws require a university training for every doctor before he can practice. Again, we apply science with great skill, but create or advance it very little indeed. Should the supply of European science, which now so promptly finds its way here and fertilizes and stimulates to more or less hopeful reaction our best scholars, and upon which we live as upon charity, be cut off by some great war or otherwise, the unbalanced and shortsighted utilitarian tendencies now too prevalent here would tend toward the same stagnation and routine which similar tendencies unchecked long ago wrought out in China.

We have no right to expect the immediate carrying out of such a radical change in our system of education as is implied in these teachings and illustrations of Dr. Hall, but nobody will regret to see him hold the standard high. We need more young men whose intellect shall be equal to original research, and whose industry and love for work shall lead them to place themselves under such guidance as that of Dr. Hall and the Clark University.

THE MEETING AT NASHVILLE.

The officers of the various Sections are already moving in the matter of preliminary work incident to the next Annual Meeting at Nashville. This is well; and if the effort this year shall bring to Nashville an array of papers such as was submitted at Newport, the meeting will prove another notable success. Only those who are of the junketing order would have accused the members at Newport of such proclivities. The submission of one hundred and seventy-three papers in the various Sections, and the extra sessions held for their proper presentation and discussion, renders it evident that banqueting was

not even incidental from first to last. If such criticism was offered in sober earnestness, we submit that a more intimate acquaintance with the work done would have effectually dispelled the delusion. Attractive as were the entertainments proffered at Newport, very few of the members were diverted from the real purpose of the meeting, and perhaps never in the history of the Association was there the same amount of work accomplished, or work of greater value, than was there presented.

The number of able writers coming to commanding positions in this country is such that with due diligence the officers should have no difficulty in securing valuable papers and in such numbers as to ably represent the medical profession in every department; and we submit that the interests of the representative medical men in America will be best served by affiliation with those who there meet, and who so ably represent the various sections of this broad land. With a judicious selection of writers, and with the proper preparation of papers, the next meeting will be one of profit and in every way enjoyable.

The beautiful city of Nashville is of itself an attraction, and the culture and hospitality of its people have long been proverbial. It is the pivotal centre of the North and South, and it welcomes the East and West. The location and the fraternal feeling of the profession in all parts of the country will alike conspire to render the next Annual Meeting a notable event.

Let the entire profession of America have an able representation, and let the members come together not only for mutual acquaintance and fellowship, but, most of all, for earnest professional work. Let the meeting at Nashville represent the best elements and the best work possible. So shall it be a signal success worthy of itself and of its place of meeting.

EDITORIAL NOTES.

HOME.

CORNELL UNIVERSITY, NEW YORK.—The authorities at Cornell University have in consideration the ways and means for the establishment of a department of medicine. They wish to found a school of the highest requirements and with an endowment proportionally large. They have gone so far as to select a name for it, as follows: "The College of Medicine of the Cornell University," and they would by preference have its location away from Ithaca, either at New York City or Brooklyn. If a handsome endowment can be secured, the rest will follow readily.

A LADIES' HEALTH ASSOCIATION.—A sanitary question, which has been before the Board of Health of New York City for some time, has been that of the handling of offensive stable refuse. The ladies belonging to the Health Protective Association have attacked this deeply rooted nuisance to crowded localities, year after year, until finally they have won their victory. It has been ordained that after the 15th of May, 1890, the contents of the manure-pits of the thousands of stables in that city, must be removed either in bales or in tight barrels, tight, dry, and tightly covered. These ladies go wherever duty calls them and their courage and pertinacity have won them and their tenement-house clients many a victory.

THE INFLUENZA EPIDEMIC OF 1889.—A few cases of catarrhal disease have occurred in New York City which seems to bear a close resemblance to the influenza of epidemic origin. They will be kept under observation by the physicians of the Board of Health and an accurate record made of them. A member of that Board is reported to have said that their work of observation was about all that could be done in a sanitary way, the disease being "mainly due to atmospheric influence and we cannot quarantine the four winds of heaven." The contagious element in influenza has been asserted, but must be extremely insusceptible of demonstration in the presence of an indisputable atmospheric cause. Although the present epidemic has been called the Russian catarrh, it is known to have been in the Balkan countries before it reached Russia. It spread over Russia at a rate of speed estimated at 200 miles per diem average, and forty per cent. of the population in northern Russia has been sneezing. It has affected the adult population in a marked degree, so that in Germany it has been remarked that the school-children escaped while their teachers were the victims. As in former incursions in Europe, elderly people have been particularly liable to the disease. The domesticated animals, as horses, dogs and cats, have been affected by a catarrhal disease as well as humanity, but appar-

ently to a less extent than on some former occasions. Just as in former years, heavy fogs have, at some places, been a concomitant of the epidemic of 1889. In some accounts of the Parisian epidemic of 1733, it is stated that there were dense, black fogs which commonly set in late in the afternoon so that people went about with lanterns and candles in their hands, "and yet had much ado to find their way and their own doors." One practical point from the present epidemic that has come to us seems to be that it is just as well to get the influenza early, if it cannot be avoided, because those who have it late are said to have it with a much greater degree of severity than the earlier victims.

Good Samaritan Hospital, Cincinnati.—An addition is being built to this hospital by the owners, the Sisters of Charity, by which the capacity of the institution will be about doubled. The Good Samaritan has, through many years of patronage by the leading physicians and surgeons of the city, become almost entirely devoted to the care of private patients.

Presbyterian Hospital Burned.—On the night of December 19th, the Presbyterian Hospital of New York, had a narrow escape from total destruction by fire. Eighty patients were in jeopardy for a time, but all were removed without the loss of a life; the only persons injured, in fact, were a few fireman. Two club houses and the Seventh Regiment Armory are near at hand and were almost depopulated by the members running to the rescue, and gentlemen in evening costume and regimentals could be seen carrying stretchers with sick and wounded on them and acting the part of a life-saving corps to the best of their extemporized ability. The loss is estimated at $100,000.

FOREIGN.

The Cholera in Mesopotamia.—The epidemic of cholera which has raged for several months in Mesopotamia has undergone a very marked decrease, and it is to be hoped that the sanitary condition of this province will shortly be as good as usual. It is said regarding the origin of this epidemic that the importation of the disease was due to the transportation of bodies from Bombay to the sacred cities of Nadjef and Kerbela. It is not impossible, although it has not been definitely proved that the cholera was thus introduced into Mesopotamia, but it would be an error to affirm that the transportation of bodies from Bombay by English steamers is anything new. This goes on every year and the Ottoman authorities take the necessary precautions to prevent all danger.

Cholera.—The *Journal d' Hygiene* of December 5, 1889, says that cholera has reached Mosul; thus the whole plain watered by the Tigris and Euphrates is invaded by the epidemic, and the epidemic will continue its march towards the south and towards the seaboard of Syria, if the winter season and abundant snows do not, by interrupting communications, play the part which is so unsuccessfully attempted by the inadequate sanitary and military cordons. Mosul is a city in direct communication with Aleppo and Damascus, but separated by the desert. It is probable that the cholera, passing through Erzeroum and Trebizond, may make its appearance on the seaboard of the Black Sea, and thence menace Europe. Moreover, information as to cholera in Persia, transmitted by two telegrams from Kermanshah, and Teheran, announce that the epidemic continues to rage at Hamadan. From Hamadan to Teheran, from Teheran to Reshd, on the Caspian Sea, communications are easy. Further, if, as it is stated, cholera is making ravages in Bokhara, from that side also the epidemic may menace Central Europe by way of Batoum.

A National Leprosy Fund.—It is announced that His Royal Highness the Prince of Wales intends to take the chair at a subscription dinner at the Hôtel Métropole on the 13th inst., for the purpose of appealing for public aid in the promotion of a National Leprosy Fund. It is proposed that the interest arising from such fund should be devoted to the medical treatment and care of indigent lepers in the British Empire, and that a sum of money be set apart and placed under the control of trustees for the endowment of two studentships, one student to make the United Kingdom and the remainder of Europe his field of investigation, and the other to go abroad and study the disease in India, China, the colonies, and elsewhere.

A Society of Naturalists and Physicians has been established at Tomsk, Western Siberia.

Sir William Stokes has been appointed Examiner in Surgery in the University of Oxford.

TOPICS OF THE WEEK.

THE RUSSIAN INFLUENZA.

After the discovery, in the last weeks of October, of the first cases of the epidemic which is now raging in St. Petersburg, the disease, under the influence of an unusually warm, moist, foggy atmosphere, with prevailing west winds, spread with wonderful rapidity throughout the city. The rapid increase of sickness was soon evidenced by the great numbers of patients transported by the ambulances to the hospitals, which were soon filled to overflowing. The number of patients attacked during the three weeks which have elapsed since the beginning of the epidemic cannot be estimated even approximately, but we believe from all that we can learn that it amounts to from one-third to one-half of the entire population of the city. The disease spread with equal intensity among all classes of the populace, from highest to lowest, and apparently without the least regard to the hygienic surroundings of the victims and without a suspicion of any special predisposition toward the disease, which, if it exists at all, must be of a most general character. The universal and equal spread is manifested especially in the disturbance of all social conditions. There are few families in which one or more members have not been seized. Instruction in the schools has come to a standstill because in many of them from 25 to 50 per cent. of pupils and teachers are absent. In some instances factories have been closed, while in others work goes on with difficulty because half the employés are sick. The military hospitals are overcrowded, and many of the sick are obliged to remain in the barracks; regular drill has been interrupted. Physicians and apothecaries have displayed an unparalleled activity, and have themselves in great measure become victims to the epidemic; in short the genius epidemicus everywhere prevails. Neither sex nor age is spared, although some physicians think they have discovered a disproportionately large number of cases in the male sex, with a lessened predisposition to the disease on the part of advanced age. That children are no more exempt than adults is shown in the fact that the ambulances of our great children's hospitals have to care for double the usual number of patients, the excess being due to the epidemic.

The occurrence of this epidemic is perhaps associated with the long continued duration of low water. The disease spreads apparently in a miasmatic manner, the miasm appearing to be of a rapidly spreading and transitory character. It is questionable whether it spreads earlier and more rapidly to low-lying quarters, the facts in this connection being of a contradictory character.

It is impossible, as yet, to say whether the disease spreads by contagion, because it has been distributed everywhere in an equable manner. On the one hand numerous cases have been reported where only one member of a family has suffered, while, on the other hand, cases are reported in which one member after another was stricken down.

The period of incubation, as definitely determined in the case of new arrivals to the city, is two days. The prodromal stage is short, often lasting only a few hours. It is recognized by weariness, headache, chills, etc., as in other infectious diseases. The complex of symptoms is various, and the cases of the disease may be divided into three groups. Common to all, however, is the appearance of general nervous symptoms, such as severe prostration and weakness, with pain in the limbs, headache and sometimes dizziness, and a variety of nervous sensations (such as hyperæsthesia), which are not always in correspondence with the fever, which is transitory and often of moderate degree. The fever generally comes on suddenly and often reaches a height of 40° or 40.5° on the first day, to fall as suddenly again; or it may remain high for a couple of days and then disappear quickly. The fever lasts from one to three days, rarely from five to six days. An enlargement of the spleen is observed in most cases.

The three groups of symptoms above mentioned are characterized as follows:

1. *The Purely Nervous Form.*—The general symptoms arising from the nervous system are very conspicuous. Sometimes the pains are of a neuralgic character and simulate a beginning pleuritis, etc. The respiratory and intestinal mucous membrane is entirely normal. This form is especially frequent and has often led to a mistaken diagnosis of insipient typhoid fever.

2. *The Form Characterized by Catarrhal Affection of the Respiratory Mucous Membrane.*—Bronchial catarrh, snuffles and conjunctivitis develop with the fever (or sometimes only become conspicuous after its abatement) and last generally four days after the disappearance of the fever.

3. *The Gastric Form, with Catarrhal Affection of the Digestive Tract.*—This sets in with frequent vomiting which may last from one to two days.

Special symptoms have been observed as follows: Herpes of the lips and nose occurs as a common symptom; herpes of the eyelids seldom occurs; erythema, roseola; urticaria, etc. As complications, though upon the whole of rare occurrence, these have been reported: meningeal irritation, catarrhal pneumonia; this last has been the cause of death in the few cases which have had a fatal termination.

Aside from the well-marked cases a great number of mild cases have of course been observed—cases in which only a portion of the above decided symptoms have been manifested, and these only in moderate degree and soon giving way to complete euphoria.

Convalescence in the typical cases occurs in varying manner, depending largely upon the severity of the attack and the character of the treatment adopted. Many patients feel quite prepared to resume their ordinary duties upon the day after the cessation of the influenza; in others the catarrh and nervous symptoms persist for days. Relapses also occur in some cases; the patient may be free from fever and feel relatively well when, on the sixth or seventh day, the fever and chill return and the catarrhal symptoms again appear.

In the therapeusis of this disease the principal rôle is played by quinine and antifebrin (0.5 grm. two or three times a day); these have the advantage of cheapness and

are therefore well suited to the poor. The other remedies chiefly relied upon are antipyrin, salicylate of sodium and similar preparations, and diaphoretics. The results effected by all these remedies have been vaunted. The laity has by this time become sufficiently acquainted with the therapeusis of the disease to undertake in some measure its own treatment, the result being that the retailing of quinine has reached enormous proportions (*e. g.*, 1 lb. in two days by the average apothecary), and the supply of dried raspberries is almost exhausted.

This brief sketch of the present epidemic, based upon communications from our colleagues, especially those received in the General Society of St. Petersburg Physicians, will require to be corrected and completed by further experience. Until then we shall add nothing to it. Regarding bacteriological work during the epidemic with a view to discovering the bacillus of influenza nothing is yet known, and we can only hope that the great burden at present devolving upon our physicians will not render such work impossible.

Reports are now coming in of the spread of the disease to other Russian cities—Moscow, Wilna and Kasan.—*St. Petersburger Med. Wochenschrift*, November 30, 1889.

DEATH OF PROFESSOR VON VOLKMANN, OF HALLE.

On Thursday, November 28th, RICHARD VON VOLKMANN, the illustrious surgeon of Halle, died at Jena, in the "clinicum" of his friend Binswanger. He held a leading place among the surgeons not only of Germany, but of Europe. He had witnessed and taken part in the development of modern surgery from its beginning forty years ago to its present flourishing condition. During his student days Simpson introduced chloroform into medical practice, and about the same time Langenbeck and Stromeyer laid the foundation of modern military surgery in the war of Schleswig-Holstein. The routine practice of amputation in nearly every case of fracture of one of the extremities was then first abolished by the introduction of excision of the joints. Langenbeck gave directions to the German surgeons to preserve as much as possible of the wounded limb, even if the time of cure was very protracted.

Volkmann followed in the footsteps of these great masters through his whole life. His researches on the treatment of joint disease and his method of permanent extension form the basis of his reputation as a surgeon. He was one of the first to accept the doctrines of Lister, and to his enthusiastic advocacy it was largely due that the theory and practice of surgical antisepsis were so quickly and so universally adopted in Germany. Volkmann not only accepted Lister's teaching, but he simplified the details of the method in several important particulars.

Though Volkmann's favorite province of professional activity was the surgery of bones and joints, his scientific interest was by no means confined thereto. He investigated and wrote on erysipelas and lupus and on malignant tumors, especially cancer. He was working at the latter subject in the last few weeks of his life. His vast experience made his opinion valued by all practical surgeons, and the part he took every year in the debates at the Surgical Congress at Berlin always contributed greatly to the success of these meetings.

Volkmann was exceedingly skilful and elegant as an operator; he was fertile in resource and a great inventor of new procedures. His pupils idolized him, for he was not only a teacher who joined the greatest elegance with the highest clearness of diction, but he was up till his death the students' sincere and warm-hearted friend.

In spite of his high rank in society and in the hierarchy of science, he remained a *Bursch* to the last. In Halle many amusing stories are current about Volkmann's good humor. In the midst of his overwhelming professional work he found time to gain the laurel wreath of a poet. His *Traumereien an französischen Kaminen* — tales which he sent home to his children during his sojourn in France in 1870 and 1871—were published under the pseudonym "Richard Leander," and had a great success. His *Lieder aus dem Saalethal* added to his literary reputation, and many of his fairy tales, told in the first instance to his own little ones, found their way to the hearts of German children.

In Volkmann Halle has lost its chief medical attraction, the German army one of its foremost surgeons, and the art of surgery one of its most brilliant exponents.—*British Medical Journal.*

PHYSICAL TRAINING IN PUBLIC SCHOOLS.

The Fourth Annual Report of the Board of Health of Maine contains a useful paper by DR. F. N. WHITTIER, Director of the Sargent Gymnasium at Bowdoin College, on "Light Gymnastics for Schools." Dr. Whittier repeats the arguments (no less weighty because they have been given before, and no less important because they are habitually disregarded by school boards), in favor of systematic physical training in the public schools. For a striking confirmation of the proposition that such training improves the mental power of its subject he cites an experiment recently carried on by Dr. H. D. Wey at the New York State Reformatory at Elmira. Wishing to give the theory a fair test, Dr. Wey selected twelve of the dullest boys in the school and gave them a thorough course in physical training, the boys themselves having no knowledge of the object of the experiment.

Their average rank in their studies for the five months immediately preceding the experiment was about 45 per cent., while during the five months' course in physical training their average was 74 per cent., and what is still better, they maintained their advanced standard during the six months following the discontinuance of the course; thus showing that the effect was permanent. In his report Dr. Wey says: "With physical culture and improvement there came a mental awakening, a cerebral activity never before manifested in their prison life. Their faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression, while the eye gained a brightness and clearness that before was conspicuous by its absence."—*Boston Med. and Surg. Journal.*

PRACTICAL NOTES.

THE INFLUENZA.

In the *Medical News* of Dec. 28, Prof. Roberts Bartholow, of Jefferson Medical College, contributes an able and interesting article upon the history, pathology and treatment of the epidemic which at the present hour is commanding the attention of the laity as well as the profession in both hemispheres. From the paper referred to we make the following extract:

"Influenza comes suddenly; goes as quickly. The least robust, at any age, and women seem to be the first victims. It is here a question of bodily condition, not of the sex. The large numbers simultaneously attacked attract general attention, and thus the most impressionable are seized, the onset being facilitated by any depressing emotion, like fear or illness. There is no rigor, properly to be thus designated, but rather a series of light chills and a feeling of heat therewith. Sometimes malaise of a general kind is experienced, but, like the attack itself, is short in duration—lasting but a few hours. With the first access of the nasal and faucal irritation comes the chilliness, which is followed by some feverishness, with more pronounced malaise, and, in general, the headache, weakness, and soreness of the members, especially of the larger joints. With the progress of the case in some epidemics there is considerable general weakness, even marked depression of the vital powers. The pulse becomes small and weak, the mind gloomy, and restlessness ensues. When a fatal termination is to occur, as a rule, an extension downward into the trachea and bronchi takes place. Although catarrhal and croupous pneumonia are said to be "complications," they should be regarded as occasional conditions, and when present are, properly speaking, constituent parts of the malady. The chief importance of croupous and catarrhal pneumonia is that the development of these, out of an existing catarrh of the bronchi, is frequently a cause of death. The rapidity with which the disease supervenes—its preliminary development being hours, and its whole career but a matter of three or four days—is remarkable. Relapses are common, usually each succeeding attack being milder, but not a few pass by easy transition into chronic bronchitis, emphysema, asthma, etc. Obviously a catarrhal process, extensive and severe, may contribute immensely to chronic disease of the middle ear, Eustachian tube, nose and throat, and thus permanently damage the parts. The best manner of securing immunity is by the inhalation of sulphurous acid gas daily when the approach of the epidemic renders it necessary, and by taking five grains of salicylate of cinchonidine three times a day, and by so living as to avoid taking cold. When the attack has begun, it seems to me desirable to give one or two grains of calomel at night, inhale some sulphurous acid gas, and have the patient sit in a room where steam containing eucalyptol can be inhaled in large quantities. The insufflation of resorcin by dusting over the entire area of affected parts as far as practicable, is also recommended. The internal remedy most desirable is atropin in solution, one grain to one ounce of water, dose being from one to five drops, the minimum being for little children (after first detention). The tincture of belladonna may be used—from one to ten drops twice a day. As the medicament is prompt and prolonged in action, it should be given not more than twice a day, unless the dose be much smaller than is advised above. Salicylate of cinchonidine and quinine should be given as a prophylactic remedy, if there be reasons to suppose that such power is really expected by it. My own conviction is that as a prophylactic the combination of cinchonidine with salicylic acid is preferable to quinine. For the depression and melancholy it is probable that atropia will do better. For the distressing headache, joint pains and wakefulness, antipyrin, acetanilid, phenacetin, and other remedies and antiseptics will, no doubt, be found useful.

ACETATE OF LEAD IN PNEUMONIA.

PROFESSOR CROCQ, of Brussels, has found that a remedy which was formerly a good deal employed in pneumonia, but which has long fallen into complete disuse—viz., acetate of lead—is in many cases of great value. This remedy was prescribed, combined with opium, by Ritscher, and afterwards by Strecht, Leudet and others. Nothnagel and Rossbach mention it in their handbook, but consider that it is useless in ordinary cases, though they recommend it where there is œdema of the lung and in the hæmorrhagic form of the disease. Professor Crocq, having prescribed the lead salt in a large number of cases, is convinced that it frequently reduces the heart beats as much as ten or fifteen per minute in a single day, and that it exerts an equally marked effect upon the temperature, the sputum, too, becoming less in quantity and less deeply tinged. Instead of producing constipation, it is far more likely to open the bowels, but, notwithstanding, this action, there is no objection to prescribing it with a little opium in cases where diarrhœa is present, or, if preferred, trisnitrate of bismuth may be added instead of opium. Small doses are of very little use, the minimum quantity that should be ordered for an adult per diem being six grains, and this may sometimes be increased with advantage to as much as fifteen grains. This treatment may be continued for a fortnight without any symptoms of lead poisoning presenting themselves. Professor Crocq re-

marks that it may be given at all stages of the disease, but at the beginning in strong subjects, and when the pain is severe, its action is but slight, and so antimonials are to be preferred at that time. Where, however, resolution is delayed, when there is but little fever, where the patient is very weak, where there is enteritis or diarrhœa, and especially where the digestive organs will not tolerate antimony, acetate of lead is very valuable. Again, when the pneumonia is secondary to some other serious disease, and when the heart is acting insufficiently so that the pulmonary circulation is interfered with, as in Bright's disease, in organic affections of the heart, drunkards, and in old people, acetate of lead will sometimes work wonders; indeed, he considers that it is most valuable in serious cases. Of course it must sometimes be combined with alcohol.—*The Lancet.*

ETHER IRRIGATIONS IN STRANGULATED HERNIA.

Dr. Ivan N. Drakin (*The Annals of Surgery*, August, 1889) eulogizes ether irrigations as an excellent means for reduction of strangulated hernia. He simply pours a teaspoonful of ether over the hernial tumor every quarter or half hour, keeping it covered with compresses during the intervals. As a rule, after three or four tablespoonfuls, the intestinal loop slips down into the abdominal cavity by itself; in some cases, however, slight pressure should be applied. In the case of incarcerated scrotal hernia, it is advisable to irrigate with a mixture of ether (twenty parts) and hyoscyamus oil (four parts). When applied sufficiently early, the method is said to give most brilliant results.

Dr. A. J. Brustein (*Ibid.*) describes the case of a woman with an incarcerated umbilical hernia of the size of a man's fist, in whom, after all ordinary procedures for reduction had failed, irrigation with a small jet of ether was resorted to, taxis being continued at the same time. In three or four minutes the reduction was effected with striking ease. The action of local etherization was attributed to a rapid contraction of the intestinal wall, and to the diminution in volume of the hernial gaseous contents caused by the sudden lowering of temperature.—*Am. Journal Medical Sciences.*

PAPULAR ERYTHEMA.

℞ Talc.
Oxide of zinc.
Powdered starch. āā 100 grams.
Boric acid. 3-6 " ℥

Bathe the surface with a solution of boric acid, and then sprinkle on the powder.

To prevent the affection so common in the newborn, apply a pomade composed of equal parts of vaseline and oxide of zinc.—Besnier, *Gaz. Méd. de Liège.*

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, Oct. 18th, 1889.

A. B. JUDSON, M.D., CHAIRMAN.

RACHITIC PSEUDO-PARALYSIS.

The paper of the evening was read by DR. H. W. BERG, who stated that in this affection the rickety child from two to five years old, is unable to walk, and in some cases he cannot stand or even sit. The disability is not the result of nervous lesion but rather the result of muscular weakness, pain in the muscles and in the bones at the points of muscular attachment, flaccidity of the ligaments, and softness of the bony levers. Such a child wished to be let alone, he instinctively prefers to keep quiet. This condition is to be distinguished from infantile paralysis; by the absence of local atrophy and cold and real paralysis not so readily, however, from post-diphtheritic paralysis where the differential diagnosis will rest on the preceding occurrence of diphtheria, the recent origin of the paralysis, and, above all, on the difficulty of swallowing and speaking dependent on involvement of naso-paryngeal and laryngeal muscles. Spastic paralysis even when mild has an exalted muscular activity which serves to distinguish it from rachitic pseudo-paralysis; and the paraplegia of Pott's disease cannot be mistaken if the kyphosis is obvious. The prognosis is uniformly favorable. These are the cases which give such good results after indiscriminate circumcision. The object of treatment should be to counteract the effect of rachitic malnutrition. These children should have a great deal of milk; cod liver oil should be given unmixed; and phosphorus in the following prescription:

℞ Phosphori gr.j.
Alcohol Absolut. ♏ cccl.
Spt. Menth. Pip. ♏ x.
Glycerinæ ʒ ij.

♏. et Sig. Six minims t. i. d. to be increased one drop weekly until ten drops are given.

DR. W. L. CARR had seen a number of cases in which a striking lack of muscular power was symptomatic of rickets although bone changes were not obvious. A number of these children had been fed at the table or on patented foods. Proper attention to diet soon brings about a restoration of muscular power without tonics.

DR. R. J. DEVLIN recalled well marked cases of this affection in children who had been exclusively fed on milk from a healthy mother.

NERVOUS SYMPTOMS PRODUCED BY PHIMOSIS.

DR. T. H. HOLGATE said that in his experience with non-rickety children, the relief of preputial irritation by discriminating operative

interference had removed serious nervous troubles. In one case, which he had presented to the Academy, inability to walk or stand had been relieved in this way in a child who was entirely free from evidences of rickets.

DR. R. H. SAYRE related a similar case of a boy, who from some central lesion had not walked for some years. After partial circumcision he could walk with the aid of two canes. A trouble of twelve years standing had thus been relieved in six weeks.

DR. BERG closed the discussion. He agreed with Dr. Carr in thinking that rachitic inability to walk is sometimes present without the usual rachitic deformities. He recognized the fact that urinary troubles occur as the result of contracted prepuce, but he had never seen a case of lesion of the nervous centres cured by circumcision. He recalled a case of difficult micturition and inability to walk in a rickety child whose phimosis was not relieved because the operation was refused. The difficulty in micturition persisted, but the child walked within eight weeks after being put upon proper diet.

EXCISION OF THE HIP-JOINT.

DR. R. H. SAYRE presented a little boy on whom Dr. L. H. Sayre had operated by excision of the hip-joint. About a year ago the patient had presented himself with the hip very badly deformed from long standing disease. The thigh was flexed on the trunk at a right-angle, and abducted. A deep abscess was opened behind the trochanter, and the acetabulum and femoral head were then found to be badly eroded. The femur was divided above the lesser trochanter, at right-angles with the axis of the shaft, and the deformity was thus reduced by excision instead of by simple tenotomy which had been proposed at first. The wound was stuffed with iodoform gauze and after two months of the wire cuirass, a long traction splint was applied and the boy took a long journey to his home. At the present time there is no abduction, and but a trace of flexion with some motion in the joint.

TREATMENT OF ABSCESSES.

DR. JOHN RIDLON asked whether an operation would have been advised for the abscess alone. He had found that many abscesses are certain to disappear when the hip is properly treated mechanically.

DR. SAYRE said that as the abscess was causing but little disturbance, he would have postponed operating on it if the child could have been kept under observation.

DR. JUDSON thought that opening an abscess, if done at all, should as a rule be followed by excision, as in the case related by Dr. Sayre on the ground that the presence of diseased bone is a greater evil than the presence of pus. He had seen no bad results follow letting the abscess alone.

DR. A. M. PHELPS said that there were some cases of abscess which he would probably not open at once, but he believed the operation perfectly harmless and desired to speak emphatically against the opinion that it is a dreadful and dangerous thing to open these abscesses.

DR. H. L. TAYLOR thought that if rest and protection are secured for the joint, the occurrence of abscesses is not of serious import. The aspirator had failed in his hands apparently because it leaves shreds of nercotic tissue which prevent the abscess from closing. It seems wise in most cases to open freely, clean out easily removable débris, and close the wound. If sinuses remain, injections with a saturated solution of iodoform in ether will sometimes cause them to close.

DR. L. A. SAYRE said that on the principal that an empty house is better than a bad tenant, he always evacuates an abscess as soon as found, and by doing this antiseptically, and securing thorough drainage, there is no danger of bad results.

DR. R. T. MORRIS said his usual custom is to open these abscesses at once, washing out with peroxide of hydrogen, removing débris, and establishing drainage. He related a recent case in which this procedure, followed by traction in the line of the deformity, had secured a good result. He had recently performed excision in another case in which disease of the acetabulum and femur had been produced by the application by the physician in attendance of traction in a straight line, according to Thomas' method. In excising the hip, he usually makes a section through the great trochanter in such a way as to allow the lesser trochanter to go into the acetabulum and so prevent the formation of a flail joint.

THOMAS' SPLINT.

DR. RIDLON did not think Thomas, of Liverpool, made traction in any line.

DR. PHELPS said that Mr. Thomas would treat a case when the leg is flexed at right-angles, by lashing the patient to the splint, and then with his wrench bending the splint down as nearly as possible to a straight line. That is a form of traction which produces great intra-articular pressure and would if continued for any length of time, produce destruction of the joint.

DR. RIDLON said that he had used Thomas' hip splint in some twelve or fifteen cases with great satisfaction. He found it cheap and easily applied. It had not caused destruction of tissue, but on the contrary, had relieved symptoms and prompted recovery.

DR. L. A. SAYRE said it seemed as if the profession were determined to misunderstand him, for he had endeavored for years past to make

clear what he meant by traction in the line of the deformed limb: it is to make traction in such a way as to separate slightly the bone from the base of the acetabulum, and so prevent pressure, gradually changing the line of traction until the limb is brought parallel with the other limb, and then apply the splint; whereas, if one employed leverage as Thomas does, this pressure in the joint is only increased. Not until the limb is in proper position, can the splint be applied to advantage. One objection to Thomas' splint is that there is no traction for overcoming muscular rigidity, and hence, it seems to be fixation only, and as such does not compare in point of efficiency with properly applied plaster of Paris splints for, here the weight of the limb will produce some traction and the plaster of Paris gives the necessary fixation. Another objection is that the patients wearing Thomas' splint cannot sit down, whereas with a properly applied splint they can sit down with great comfort.

THE QUESTION OF EXCISION.

Dr. R. H. Sayre said that in the case presented the original intention had been simply to open and drain the abscess; but the diseased condition of the bones necessitated excision. As regards the conditions under which he would advise excision, if the leg were straight and the abscess causing but little disturbance, he would postpone the operation, provided the patient could be kept under observation; but if the latter condition could not be secured, he would be disposed to remove whatever disease already existed rather than allow the case to go from under observation with the disease ready to extend at any time.

Dr. Berg thought the good condition of the patient in the present case justified operative procedure for the correction of deformity.

Dr. Taylor thought that excision might be required in neglected cases, of which there probably always will be a considerable number; but the operation should be looked upon rather as treatment of the results of neglect than as treatment for hip disease.

Dr. Phelps practiced excision by an open wound, leaving the periosteum to reproduce bone. The German surgeons remove the periosteum and capsule and try to secure union by the first intention. Their results are shortening, flail joints, and relapses in a large per cent. of cases. He related two recent cases of excision in patients 34 and 23 years of age. In these cases the femoral head was destroyed and the acetabulum extensively diseased, a condition in which removal of the disease is the most rational treatment. In one of the cases, the head was found separate from the shaft. He had frequently found this condition, and believed that the head lying loose in the joint cavity is to be considered as a foreign body. It is better to remove it than to leave it to undergo decomposition and lead to septicæmia and amyloid disease. A more useful limb is left if the exsection includes the trochanter. In general, he thought excision under the age of 10 is a calamity. In the case presented, however, he thought the result was good, as extreme deformity had been corrected.

Dr. Judson thought that in excision we have no certainty of removing, together with the diseased bone, those portions which contain latent foci. He had found no method of determining whether the focus which has burst into inflammation is the only outbreak to be feared, or whether it is to be followed by others. In some patients a single abscess closes the morbid process; in others, one abscess follows another, showing that osteitis is lighted up successively in the neck, the head, the shaft, and the bones of the pelvis. An excision may fortunately remove all that is diseased, with a good immediate result; or it may leave dormant foci which come into activity one after another, and lead to a tedious and unfavorable result. Ultimate good results are obtained in these difficult cases by management with the hip splint, and without excision.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Chloralamid—Lepers and Leprosy in Norway—A Myxoma Springing from the Infra-orbital Nerve—Does Moderate Drinking and Long Life go Naturally Together?—Miscellaneous Items.

Some recent experiments with the new hypnotic, chloralamid, on frogs and rabbits tend to show that the drug is completely harmless to animals; also that the blood pressure is not materially altered. This being the case, the drug has been tried on a few patients who complained of sleeplessness. The sleep after chloralamid was deep and refreshing; its duration varied, according to individuality, between six and ten hours. The patients awoke without feeling the slightest indisposition, without headache or indigestion, or bad taste in the mouth, as frequently observed after chloralhydrate. Even very delicate patients with weak stomach did well with chloralamid, which is stated to be due to the fact that the drug is non-irritant to mucous membranes, not even to those of the most delicate structure, as the conjunctiva of the eye. In some comparative investigations into the valne of chloralamid and sulphonal the former has been found to be much superior to the latter. Chloralamid is recommended in all cases of sleeplessness which are the consequences of nervous excitation of a slight de-

gree, or of organic disease (phthisic, heart disease, spinal affections), or of neurasthenia, as also in all cases of insomnia which are not associated with vehement excitation or acute physical pain.

A deeply interesting article appears from the pen of Dr. Robson Roose on "Lepers and Leprosy in Norway." The author is distinctly of opinion that it is contagious and that there is no known medical treatment for its cure, and that isolation is the only effective measure of extirpation. In his final conclusion Dr. Roose states: "There is only one plan by which the disease can be eradicated—the construction of a sufficient number of leper hospitals and the compulsory detention of the sufferers." Sir Morrell MacKenzie has been dealing with the same subject, and is in entire agreement with Dr. Robson Roose as to the contagious nature of the disorder and the absolute necessity of measures to prevent its transmission. "The contagiousness of the disease," he writes, "was never doubted till it had nearly died out. The alarming spread of this loathsome pest in recent years is, in my opinion, due to the fact that for some time the opposite doctrine gained the ascendancy. For this pernicious error and all the disastrous consequences that have flowed and continue to flow from it the Royal College of Physicians of London is chiefly responsible."

Mr. Bland Sutton, at the Clinical Society of London, recently related a case in which a woman was supposed to be suffering from neuralgia due to bad teeth, but which was really a tumor of the infra-orbital nerve. A slight displacement of the eyeball was detected and a critical examination of the patient led to the diagnosis of a tumor entangling the infra-orbital nerve; the skin supplied by the palpebral, labial and nasal branches of this nerve was anæsthetic. Agonizing pain was experienced. Mr. Sutton removed the anterior wall of the maxilla and found the antrum occupied by a lobulated tumor. The whole of the maxilla was then removed and Meckel's ganglion exposed and destroyed by the cautery. The patient did well and made a complete recovery. Subsequent dissection of the tumor showed it to be a myxoma springing from the infra-orbital nerve and invading the orbit and antrum.

The British Medical Temperance Association meeting in the rooms of the London Medical Society has been controverting the statistics which recently attracted so much attention, showing apparently that moderate drinking and long life went naturally together. Dr. W. B. Richardson, who presided, vigorously challenged the recently revived contention that a longer span of life falls to the lot of moderate drinkers than to that of total abstainers. The report subsequently read by the Hon. Sec., Dr. I. I. Ridge, certainly went far to controvert this notion. In reply to a question addressed to 279 workhouse medical officers, "Under what circumstances are alcoholic liquors allowed to the inmates of the workhouses under your control?" 244 answers were received, from which it appears that 75 per cent. give alcohol for the sick only, 8 per cent. to the aged and infirm, 12 per cent. to the aged for extra work, and 5 per cent. never give any. The second question related to the health of the paupers; thus answered, out of 203 returns 73 state that it was unaffected, 2 that it was worse, and 3 that the sick suffered from being deprived of alcohol. With reference to a question touching the longevity or otherwise of pauper imbibers, 223 answers are forthcoming. Nineteen assert that life is prolonged, 160 that it is unaffected, 29 that it is shortened, and 15 that it is certainly shortened in the case of sick persons.

A considerable excitement has been aroused by the finding of two men dead in Leeds in a cabin in the premises of the Leeds Forge Company, where "water gas" was used as an illuminant. In accordance with instructions, several medical men proceeded to a room at the forge,in which a band practices, to make a post-mortem examination. After being in the room a short time one of them sunk down unconscious, and whilst the other medical men were attending to him several of them felt unpleasant symptoms of more or less urgency, one of them becoming unconscious. The special proceedings were stopped and the room sealed up. In accordance with instructions from the Home office, Dr. Stevenson, of Guy's Hospital, proceeded to Leeds and the post-mortem examination has been concluded. Dr. Stevenson has removed some of the viscera for examination and analysis. It is hoped he will be able to throw light on this mysterious matter.

There was a good deal of difference of opinion elicited before the Royal Commission on the Blind and Deaf and Dumb in regard to the perpetuation of blindness and deafness and dumbness by the intermarriage of the sexes thus afflicted. Some witnesses were of opinion that the intermarriage of two blind people or two deaf and dumb people had a decided tendency to perpetuate in their offspring these afflictions.

The result of extensive experiments in the German army as to the best treatment for excessive sweating of the feet has been to prove the great superiority of chromic acid over all other applications. Of 18,000 cases in which chromic acid was used 42 per cent. were reported "cured," 50 per cent. "improved," and only 8 per cent. "unrelieved." The method is first to bathe the feet, and after being thoroughly dried a 5 per cent. solution of the acid is applied with a brush. Two or three applications suffice as a rule, but the treatment has sometimes to be repeated after a fortnight.

During the month there will be some interesting discussions at the Medical Society "On the Diagnosis and Treatment of Aneurisms of the

Arch of the Aorta." Dr. R. Douglas Powell will open the discussion, and a subsequent meeting will be devoted chiefly to the exhibition of cases of aortic aneurism.

A bacillus has been discovered in sections of warts, which is always present in the prickle layer. It has distinctive qualities as regards its capacity for color, and is found both between and in the cells. G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Section on Practice of the Academy of Medicine —The New Expectorant, Cocillana— Dr. D. C. Cocks on Eye Symptoms as Aids to Diagnosis.

At the last meeting of the Section on Practice of the Academy of Medicine Dr. R. W. Wilcox read a paper on "The New Expectorant, Cocillana," in which the results given were founded on his own clinical experience. The preparation used was the concentrated tincture, but he stated that he thought the fluid extract would be preferable on account of the absence of alcohol. The source of this drug, he explained, was the bark of an undetermined species of guarea, which was discovered in Bolivia in 1886 by the eminent botanist, Professor H. H. Rusby, of the College of Pharmacy, who first brought specimens to this city.

The principal physiological action of the drug in its crude state (powdered bark), Dr. Wilcox said, was the production of nausea, with metallic taste in the mouth; this nausea being accompanied by an early discharge of mucus and later by dryness of the throat. Its action might be stated, then, to consist of stimulation for some hours of the vessels and glands of the mucous surfaces, more especially of the respiratory tract, with subsequent diminution of activity (sedation). The dose of the concentrated tincture of the bark employed by him varied from ½ a fluid drachm to 2 drachms, given every two to eight hours. Having made a comparison of the effects of the drug with those of apomorphia in acute bronchitis, he stated that the expectorant effect of cocillana was not the first stage of the nausea, as was shown by the fact that an increase of appetite was usually observed even under full physiological doses, while the fulness of the pulse remained unchanged.

He related a number of cases in which cocillana was used, and went on to say that it was probable that in subacute and chronic bronchitis would be found the larger field for its employment. The facts that its expectorant effect was more sure than apomorphia or ipecacuanha in liquefying bronchial mucus, that it increased the appetite, and that it acted to some extent as a laxative, all commended it to favor. In cases of senile bronchitis, however, particularly when the costal cartilages are calcified, it might so markedly add to the bronchorrhœa as to be positively dangerous; especially as it was not, like belladonna and strychnia, a stimulant to the respiratory centres.

Having related another series of cases, Dr. Wilcox said it could be seen that in chronic pulmonary disease cocillana had almost its only use in liquefying bronchial secretion and relieving the acute exacerbations of associated chronic bronchitis. Under its administration the cough and expectoration diminished, the appetite increased, and the night sweats and constipation were relieved. In conclusion, he stated that he believed cocillana to be superior to apomorphia, except in cases of acute bronchitis treated within the first forty-eight hours. It was certainly preferable to ipecacuanha in that it did not so readily cause nausea and metallic taste in the mouth, and moreover assisted regular movement of the bowels. It must yield to carbonate of ammonia in chronic senile bronchitis, although the heart-beat and pulse became stronger under its use; nor could it stimulate the respiratory centre like strychnia. It was immeasurably safer in every stage of acute bronchitis than pilocarpin, because it did not depress the heart's action. On the whole, he believed that it could fully replace ipecacuanha in every sphere of action, and that in many cases it could with advantage be substituted for apomorphia, carbonate of ammonia, strychnia and other drugs classed with more or less reason as expectorants.

Dr. Rusby, the discoverer of cocillana, who was present by invitation of Dr. Wilcox, exhibited some of the bark of the plant and also herbarium specimens showing the leaves and fruit. He then made some remarks in the course of which he said it was his own practice, if a case of bronchitis came under observation early, to push the cocillana vigorously, giving from 15 to 45 minims of the fluid extract every hour for twelve hours, if necessary. At the end of six or seven hours it could usually be seen whether it was going to have the desired effect or not. In Bolivia his attention was first directed to the drug by the natives. As soon as he could get the opportunity he commenced experimenting with it upon his friends, in doses of 20, 30 and 40 grs. of the powdered bark; and he found that these accounts were for the most part fanciful. He found, however, that the inhabitants sometimes gave it in such enormous doses as to destroy life by the vomiting and purging it occasioned. He said, in conclusion, that he had anticipated that cocillana would prove a very useful remedy in pharyngitis and laryngitis, as well as in bronchitis; and in this he had not been disappointed.

The principal paper of the evening was by Dr. D. C. Cocks, on "Eye Symptoms as Aids to Diagnosis." The indifference of a large number of medical men to the eye, he said, was probably due to a lack of appreciation of the important bearing that eye symptoms have on diagnosis and treatment. Many physicians seemed to think that the eye was too delicate an organ to be treated by any but a specialist, and with the determination to turn all cases of eye trouble over to the specialist at once they felt their conscience clear to let its anatomy, physiology, diseases and treatment drop entirely out of mind; forgetting how important a knowledge of the eye and its diseases was in the diagnosis of many of those diseases which they were daily called upon to treat. He therefore proposed to bring to the notice of his hearers an outline of the more important facts about the eye and its diseases a knowledge of which was essential or helpful in diagnosis.

Diagnosis, he went on to say, was sometimes made from one pathognomonic symptom; at other times it could only be made by a careful study of the symptoms for months or years. It was therefore evident that an organ like the eye, which in some cases gave pathognomonic signs and in others symptoms which proved to be the key to the situation, could not well be turned over to the specialist on all occasions. Dr. Cocks then discussed in turn, with more or less completeness, the diseases of the lachrymal apparatus, the lids, the orbit, the muscular apparatus, the cornea and sclera, the uveal tract (iris), ciliary body and choroid, the lens, the vitreous, and the retina and optic nerve; and also took up a number of individual diseases, general in character or located in other parts of the body than the eye, and pointed out the importance of the eye symptoms that might arise in connection with them.

In speaking of the derangements of the ocular muscles he said that, as a rule, they sympathize with the general system, and wonderful results were sometimes obtained by the relief of oculomuscular strain, where this had been the exciting cause of various symptoms in nervous individuals whose health had been below par. The correction of insufficiencies by prisms or tenotomies would often give an entirely new aspect to cases that were previously obscure. When all the external muscles of the eye were paralyzed we had ophthalmoplegia externa, a disease, not of the eyes, but of the central nervous system; the nuclei of the third, fourth and fifth nerves in the floor of the fourth ventricle and the aqueduct of Sylvius being implicated. A recurring paralysis of the fourth, or third, or sixth, was frequently the first indication of spinal or of general sclerosis. The nerves supplying the ocular muscles traversed the cranial cavity for such a distance that frequently the first symptom of a basilar trouble or intracranial disturbance was evinced by the paralysis of one or more of the muscles supplied by them; and the progress of which growths could often be watched by the successive involvement of the different muscles, while the exact location of the neoplasm was thus accurately marked out. The nature of the diseased condition also could often be diagnosed by the grouping of symptoms aided by the condition of the muscles.

While treating of the interior of the eye Dr. Cocks expressed the opinion that the ophthalmoscope should be in the hands of every practitioner, and as illustrating the facility with which a knowledge of its application might be acquired he stated that he had had medical students clearly describe the fundus of the eye after a single lesson. A choroiditis of the macula of each eye, whether occurring synchronously or consecutively, he went on to say, was almost pathognomonic of syphilis, either congenital or acquired. Its early recognition was of the utmost importance to the patient, and as the changes could be readily seen (when looked for), he had a right to feel aggrieved if his central vision was lost through neglect. In regard to the normal fundus, he could only say that its negative value in diagnosis could be properly appreciated only by those accustomed to look to the ophthalmoscope for aid.

Probably the most interesting part of this subject was the light thrown on intracranial changes and on general diseases by changes in the retina and optic nerve. The neuroretinitis of Bright's disease, with its accompanying and almost pathognomonic changes in the neighborhood of the macula, were now well known, and were of sufficient importance to demand the attention of every practitioner. Having referred to the retinitis of syphilis, he said that optic neuritis, especially if double, was one of the greatest aids to diagnosis, and related an illustrative case in which the patient suffered from vomiting and slight headache, with vertigo at times, and in which, after careful examination, he pronounced the condition ophthalmoplegia externa, and the lesion therefore nuclear. Shortly afterwards, however, he found double optic neuritis; which overthrew the nuclear theory, and established that of a slowly growing neoplasm.

In speaking of disorders of function he said that a central scotoma for red was almost pathognomonic of tobacco poisoning. Night blindness occurred in commencing atrophy of the optic nerve, in extreme cases of anæmia from fasting, and in retinitis pigmentosa. Word blindness, as a rule, accompanied lesion of the cortex cerebri; while acquired partial or complete color blindness was indicative of nerve atrophy. When monocular hemianopsia existed the condition was probably one of intraocular lesion, such as detached retina, etc.; but when binocular hemianopsia was present, an intracranial lesion certainly existed,

and this lesion was along the optic tract or in the occipital lobe of the same side as the loss of vision.

In the discussion following Dr. H. D. Noyes said that the particular significance of the paper was its advocacy of a closer affiliation between the eye specialist and the general practitioner. He regarded it as a great misfortune that in every specialty the tendency of the work was to narrow the field and shorten the vision of the physician devoting himself to it; and if it should follow as a result of Dr. Cock's labors that general practitioners should less frequently than now omit to make an examination of their patients' eyes, he believed that they would have accomplished a most excellent purpose. The range of affections in which the eye was concerned to a greater or less extent was immensely large; embracing as it did not only those of the entire cerebro-spinal nervous system and the peripheral nerves, but the diseases of remote organs and the condition of the blood itself.

Dr. J. E. Weeks agreed with Drs. Cocks and Noyes that if the general practitioner would make himself more familiar with eye symptoms the community would be greatly benefited. In illustration he mentioned the case of a gentleman residing in a neighboring town who suffered very greatly from neuralgia and was finally sent to New York for examination. Here it was found that he had already irretrievably lost his eyesight by glaucoma. Any neuralgic pain, therefore, which was not clearly understood should, he thought, at least awaken the apprehension of the attending physician, so that the occurrence of such a calamity as this might be averted, if possible. He went on to say that the appearances of the lids were sometimes indicative of systemic conditions, and stated that he had known the diagnosis of nasal diphtheria to be made in this manner. The diphtheria of the nasal passages had resulted in diphtheritic conjunctivitis, and if the attending physician had been familiar with the appearances of the latter the diagnosis could have been made much earlier, and the life of the patient (who died of the disease) might perhaps have been saved.

Dr. W. F. Mittendorf thought that since we had at our command such a mydriatic as cocaine, and since the ophthalmoscope was now so perfect an instrument, there was really no excuse for not examining the fundus when light was needed on a diagnosis; and he said he felt sure that if physicians in general would take the trouble to familiarize themselves with the use of the ophthalmoscope they would find it not only profitable, but exceedingly interesting to themselves.

Dr. T. R. Pooley, in referring to inadequacy of the ocular muscles, said it was just now the fad to attribute immense importance to such inadequacy, and to perform repeated operation for its relief. If many of these cases were left to themselves, or, what was better, if the patient were treated for his general condition by some sensible and intelligent practitioner, this muscular insufficiency would entirely disappear of itself. What such an individual needed was proper attention to his general health, and not special treatment from an oculist. He did not, however, mean to say, of course, that cases did not sometimes occur which required to be treated by prisms, or even by tenotomy. In the course of his remarks Dr. Pooley also called attention to the significance of intra-ocular hæmorrhage. This occurred, he said, where changes, either atheromatous or syphilitic, had taken place in the arteries, and where retinal hæmorrhage was observed the chances were very strong that hæmorrhages would occur elsewhere also. He regarded this as such an important point that he considered that whenever the retina showed this condition it was the duty of the oculist discovering it to call the immediate attention of the regular medical attendant to it, since such a patient was liable to have intra-cranial hæmorrhage at any moment.

In confirmation of the correctness of Dr. Pooley's views on this last point, the Chairman of the Section, Dr. R. C. M. Page, related the case of a gentleman whom he was attending for Bright's disease. All the symptoms had shown marked improvement and the patient was about starting for the South. As he complained of some little trouble in his sight, however, Dr. David Webster was asked to make an examination of his eyes. He ascertained that the trouble was due to retinal hæmorrhage, and in consequence of the condition which he found he expressed the opinion that the gentleman was liable to die at any time from cerebral hæmorrhage. The sequel proved that the oculist was right, for he did die from this cause within twenty-four hours.

P. B. P.

NECROLOGY.

Dr. Charles H. Nichols.

Dr. Charles H. Nichols, the distinguished head of the Bloomingdale Asylum, died December 16th somewhat unexpectedly from a complication of hepatic and intestinal diseases. He had only recently returned from a visit to the European capitals in the interest of the new Bloomingdale Asylum that is now being planned. He had suffered greatly from sea-sickness and was much reduced in strength. He was a native of Maine, born in 1820, and an alumnus of the University of Pennsylvania in the year 1843. His record at the Government Hospital for the Insane at Washington for twenty years and his ten years or more in New York City have placed him in the front rank of the alienists of his time and country.

BOOK REVIEWS.

PHYSICIANS' AND STUDENTS' READY REFERENCE SERIES: SYNOPSIS OF HUMAN ANATOMY. Being a Complete Compend of Anatomy, Including the Anatomy of the Viscera and Numerous Tables. By JAMES K. YOUNG, M.D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. Philadelphia and London: F. A. Davis. 1889. Cloth, price, $1.40; pp. ix, 393.

In this volume the author has endeavored to furnish a concise though complete synopsis of human anatomy. His task has necessarily been a difficult one, but by resorting to various ingenious devices he has been able to abridge in some directions without sacrificing in the matter of clearness of description. Descriptive anatomy does not afford an inviting field for such work, but we believe that Dr. Young has done his work as well as it can be done.

LECTURES ON OBSTETRIC NURSING. By THEOPHILUS PARVIN, M.D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College; Obstetrician to the Philadelphia Hospital. Pp. viii, 104. Philadelphia: P. Blakiston, Son & Co. 1889.

These lectures are presented in a particularly agreeable and interesting form, the author having interspersed his practical instructions with many historical allusions and literary references. The intelligent nurse cannot fail to find both entertainment and profit in their perusal. It is to be regretted that the subject is not treated in greater detail, but as far as it goes one finds everything to admire and but little to criticise.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Obstetrics and Diseases of Women.

The officers of the Section of Obstetrics and Diseases of Women respectfully request those who desire to read papers in that Section at the meeting of the American Medical Association to be held in Nashville, Tenn., May 20–23, to communicate the titles thereof to either of the undersigned not later than January 15, 1890.

WILLIAM WARREN POTTER, Chairman,
284 Franklin St., Buffalo, N. Y.
JOSEPH HOFFMAN, Secretary,
126 W. Diamond St., Philadelphia, Pa.

MISCELLANY.

PRIZES OF THE SPANISH MEDICO-CHIRURGICAL ACADEMY.—The Spanish Medico-Chirurgical Academy offers prizes for the best essays on the following subjects: 1. Modern Discoveries in Physics Applied to Medicine: Have they Advanced the Science of Diagnosis? 2. Limits of the Expectant Method and the Therapeutic Value of Hygiene in Chronic Diseases of the Stomach. Each prize will consist of 250 pesetas ($50), with the title of Corresponding Member of the Academy. Essays may be written in Spanish, Portuguese, French, Italian, English or German. Each essay must bear a motto, the name and address of the author being sent in a separate sealed envelope. All essays must be in the hands of the Secretary (Montera, 22, *bajo*, Madrid), on or before Sept. 15, 1890.

LETTERS RECEIVED.

Dr. W. A. Brownell, Boston, Mass.; J. Browne, New York City; Dr. W. W. Potter, Buffalo, N. Y.; Dr. J. E. Tefft, Springfield, Mo.; Paris Medicine Co., Paris, Tenn.; Dr. William A. Edwards, San Diego, Cal.; Dr. J. E. Carpenter, Stanford, Ky.; Dr. A. J. Comstock, San Buenaventura, Cal.; Dr. W. M. Moore, Paris, Tex.; Dr. A. G. Lamothe Ramsay, St. Cloud, Minn.; Dr. Andrew Seargent, Hopkinsville, Ky.; Dr. F. B. Lovell, Daykin, Neb.; Mrs. C. H. Wright, North Madison, Ind.; Peacock Chemical Co., St. Louis, Mo.; Dr. Landon B. Edwards, Richmond, Va.; Dr. W. C. Sandrock, Baltimore, Md.; Lehn & Fink, New York; Dr. Geo. C. Potter; Honolulu, H. I.; Dr. J. M. Anders, Philadelphia; The Medical and Surgical Sanitarium, Battle Creek, Mich.; Dr. F. C. E. Mattison, Chicago; Moore's Subscription Agency, Brockport, N. Y.; The Lakeside Publishing Co., Buffalo, N. Y.; Dr. Gales B. Bullard, St. Johnsburg, Vt.; Dr. Thomas A. K. Morton, Philadelphia; Fairchild Bros. & Foster, New York; Parke, Davis & Co., Detroit, Mich.; Jerome Kidder Mfg. Co., New York; The Ontario Medical Library Association, Toronto, Can.; Dr. J. Lucius Gray, Chicago; Dr. H. J. Brooks, Dixon, Ill.; Maltine Mfg. Co., New York; Dr. J. H. Goss, Fort Lamar, Ga.; Dr. Henry S. Sevan, Chicago; Dr. Geo. F. Cook, Oxford, O.; Med. Dept. Univ. of Georgetown, Washington, D. C.; Dr. Wm. Carr, New York; John C. Harris, Zanesville, O.; I. Haldenstein, New York; Dr. N. Holton, Harkers Corners, Ill.; Fred. W. Nostrand, New York; Dr. A. F. Comings, Rockford, Ill.; Sharpe & Dohme, Baltimore, Md.; Dr. William C. Rives, New York; Dr. G. F. Cook, Oxford, O.; E. Steiger & Co., Dr. A. M. Jacobus, New York; Dr. Walter Foly, Boston; Theo. J. VanHoren, New York; Dr. C. S. Pixley, Elkhart, Ind.; Lutz & Movius, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 21, 1889, to December 27, 1889.

Major Calvin DeWitt, Surgeon (Ft. Missoula, Mont.), is granted leave of absence for one month, to take effect not later than January 1, 1890, with permission to apply at Div. Hdqrs. for an extension to include February 27, 1890.

By direction of the Secretary of War, Capt. Paul R. Brown, Asst. Surgeon, now at Trinidad, Col., will report in person to the surgeon in charge of the Army and Navy General Hospital, Hot Springs, Ark., for admission to and treatment in the hospital. Par. 16, S. O. 296, A. G. O., December 20, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 28, 1889.

P. A. Surgeon E. P. Stone, ordered to the "Independence," Mare Island, Cal.

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ORIGINAL ARTICLES.

THE CHOICE OF OPERATIONS FOR THE REMOVAL OF VESICAL CALCULI IN THE MALE.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. T. BRIGGS, M.D.,

OF NASHVILLE, TENN.

The subject of stone in the bladder possesses peculiar and always fresh interest for the surgeon, and no matter how often discussed, any suggestions that may shed light on the subject are at all times welcome. The object of this paper is not, however, to present any startling or novel facts, but to calmly, dispassionately and impartially consider the question of "The Choice of Operations for the Removal of Vesical Calculi in the Male."

The safest and best method of removing stones from the bladder has long been sought but, like the philosopher's stone, has never been found. There is no *best* operation for the extraction of urinary calculi. Every case of stone has its special indications, and the best results will be attained by the surgeon who has a thoroughly practical knowledge of all plans of operating and who appreciates the paramount importance of selecting the operation best adapted to the case under consideration. American surgeons, as a rule, recognize this principle and shape their practice accordingly. I have myself done all of the operations usually practiced, except the recto-vesical. I have often congratulated myself that surgery possesses so many resources for the relief of this distressing and painful malady.

Practically, when a stone has become too large to be evacuated through the natural passages, even after free dilatation of the urethra, one of two courses may be adopted by the surgeon for the relief of the great suffering and distress incident to its long-continued presence in the bladder:

1. The formation of an artificial opening sufficiently large to permit its extraction in its integrity or after it has been fragmentized.

2. The pulverization of the stone so that it may pass or be removed through the natural passages.

The success of either of these methods is largely dependent on the thorough preparatory treatment of the patient. The preëminent success of Dudley, Mott and others, was doubtless due to the careful preparation of the subject of operation, and my own success has been greatly enhanced by a strict observance of the plan. The preparation should consist in diminishing or reducing the irritability and inflammation of the bladder and urethra, correcting morbid conditions of the urine, and improving the general health of the patient. In most cases, the treatment is followed by mitigation of the painful and distressing symptoms which have so long harrassed the patient, and in some the relief is so great that they are often disposed to delay operative procedure indefinitely. There are some cases, however, in which no treatment, general or local, has any beneficial effect. Patients, in spite of treatment, continue to become more and more emaciated and debilitated, the constitution is shattered, and the urine filled with pus and often stinking with putridity.

When judicious treatment fails to effect the desired result, it will be wise, in my judgment, to decline operative interference, because such interference will nearly always be attended with rapidly fatal consequences. I have on several occasions declined to operate under such circumstances and have never regretted it.

The first method of operation referred to—"cutting for the stone"—is one of the oldest operations known to surgeons; and although it has undergone numerous changes since the disciples of Celsus blindly cut on the gripe, it is still regarded as a useful and valuable—in many cases the only—means of ridding the bladder of its foreign occupant.

The selection of the method of lithotomy will be discussed as we advance.

The second plan of removing stones from the bladder—by crushing—a comparatively modern procedure, was devised and brought into practical utility by Civiale in 1824. It consists in crushing the stone at many short sittings, with brief use of instruments, and leaving the fragments to be disposed of by the natural efforts of the bladder.

The great number of sittings, the excessive irritation set up in the bladder and urethra by the irregular fragments of stone, and the numerous complications that follow this method formed serious obstacles to its general adoption, and it was

rapidly losing its hold on the profession when our distinguished countryman, Prof. Henry J. Bigelow, happily conceived the idea of crushing the calculus and removing the fragments at one and the same sitting by means of specially devised instruments. The new method, "litholapaxy," was eagerly accepted by the surgical profession, and has now nearly displaced the ordinary operation of lithotrity. It was a brilliant discovery, and the surgical world owes an everlasting debt of gratitude to the genius of Bigelow.

In considering the choice of operation for the removal of calculi, the circumstances which influence the result of each method of operation should be thoroughly understood, their comparative value fully appreciated, and the various conditions of the patient, and of the stone itself, comprehended.

The data from which a choice is determined are:

1. The age of the patient,
2. Size and consistence of the stone.
3. The recurrence of the stone.
4. Condition of the urinary apparatus.
5. The results of the different methods.

The age of the patient is a very important element in the selection of a mode of operation. It is almost universally conceded that in children under 16 years of age, lithotomy is one of the most successful of the major operations and is really one of the triumphs of surgery. Nothing could be gained by substituting lithotrity or litholapaxy for it, even if there were no difficulties in the way of their performance.

The average rate of mortality in lithotomy is generally reported as one in sixteen. Cheselden lost one in thirty-five. The reports of St. Thomas' Hospital show one in fifty-eight. Gross reported one in thirty-six. In my own practice in children under16 years of age, seventy-one submitted to the medio-bilateral method fully and thoroughly recovered. These results have never been equalled by either method of crushing, and I cannot understand why surgeons should desire to change the mode of operation which has in children given such brilliant success. Some very distinguished and learned surgeons have, however, advocated and practiced rapid crushing in children and have claimed good results from it. The reasons given by its advocates for the preference are, rapidity of cure and absence of cutting.

The first claim is specious. In a majority of well executed cutting operations the little patients are up in a day or two and in a week are well to all intents and purposes. Two-thirds of the cases submitted to the operation require no after-treatment except cleanliness.

In regard to the second claim, children being ignorant of the nature and magnitude of the operation, have no mental disquietude or dread of it, and the operation is so quick, so easy, and so safe that it amounts to nothing.

Statistics of litholapaxy in children are very meagre. Keegan's tabulated report of fifty-six recoveries and two deaths, made to the British Medical Association at Brighton in 1887, is the most brilliant result that I am cognizant of. All of these operations were made on Indian boys. Is it not probable that Indian boys have a peculiar tolerance of operation which is not enjoyed by boys of other countries? This supposition is confirmed and sustained by the fact that Freyer reports 143 lithotomies on Indian boys without a death.

Until a larger number of statistical tables have been gathered by different operators the relative success of the cutting and crushing methods in children cannot be positively determined. But when the small size and delicate texture of the urethra, and the high position and the irritability of the bladder, and the erethism of the nervous system in children are considered, it can be easily believed that a smooth incision in the prostatic portion of the urethra and the gentle withdrawal of the stone will be followed by better results than when the prolonged and tedious manipulations necessary in litholapaxy have been employed. I think it may be safely concluded that in children under the age of 16 years the cutting method should be chosen as the safer and better method of removing vesical calculi.

After puberty and even in advanced age, crushing is *the* operation *par excellence*, and when the environments of the case have been favorable it has proven eminently successful. It should be chosen as a general rule of practice, but other considerations, which will be discussed, should be taken into account in dealing with individual cases.

In advanced age the loss of vital integrity, the necessarily increased size of the prostate gland with its consequences, thickening and contraction of the bladder, etc., cause every method to be more fatal, and the fatality increases with the increase of age. Crushing, as a general rule, has shown better results in such cases than cutting, and should be chosen as offering the best chances of relief. My individual experience, however, does not sustain this opinion. Cutting in my hands has been as successful as has crushing in the hands of others or in my own. I lithotomized eight old men in the last few years the sum of whose ages aggregated 500 years (an average of 62½), with complete restoration of health and the return of the functions of the urinary organs. Old age alone does not constitute a bar to either operation.

The character of the calculus will greatly influence the surgeon in his choice of operation, and it is absolutely necessary that a correct knowledge of its size and consistence should be obtained, in order that the operation be suitably adapted to the case under advisement. The surgeon may form a good estimate of the size and consistence by the use of the sound, but its actual measure-

ment by the lithotrite will give more satisfaction.

When a stone is small or of medium size, with favorable surroundings, the crushing method should unhesitatingly be chosen. Even when a stone is large with comparatively soft texture, it should be submitted to crushing. Before Bigelow proved to the contrary, it was thought that no stone more than 1 inch in diameter should be crushed; now very much larger ones are often successfully dealt with in this way. It is hard to say how large a stone can be safely crushed considering alone the size of the calculus. I successfully crushed and removed one weighing more than 3 ozs. at one sitting.

By the time, however, a stone has attained large size, serious pathological changes are produced in the bladder and associate organs by its long-continued presence, which offer serious impediments to crushing, and, in my judgment, it can be more safely and successfully removed by one of the cutting methods of operation.

A greater obstacle to the crushing operation than the size of the calculus is its consistence. The hard oxalate of lime or uric acid stone, especially if of large size, often resists the most powerful lithotrite, and even when it can be broken into pieces, the time consumed, the necessarily frequent introduction of instruments, and the marked angularity of the hard fragments, often cause serious injury to the bladder and urethra, and even death of the patient. I am aware that under the improved crushing operation very hard and quite large calculi may be successfully crushed, but I am fully convinced that a well selected cutting operation under the same circumstances will prove safer and more successful.

Lithotomy should, in my opinion, be chosen in all cases when a large calculus of the oxalate or uric acid variety exists.

In cases of encysted stone, which fortunately are very rare, lithotomy is alone suited for its removal. It should be selected also for calculi formed on foreign bodies which cannot be crushed.

The relative frequency of the recurrence of stone after the crushing and cutting methods should have great weight in selecting the mode of operation. It is acknowledged that after lithotrity recurrence happens much more frequently than after cutting. In the practice of Sir Henry Thompson, the greatest living lithotritist, a return of calculus occurred once in seven cases. It is estimated by other distinguished writers that it takes place once in every five cases—20 per cent. —when not more than 2 per cent. return after lithotomy. This would in itself be sufficient reason for choosing lithotomy in preference to the old method of crushing. But it is believed that litholapaxy is more thorough in clearing the bladder of fragments, and that consequently the recurrence is less frequent, probably not more frequent than after lithotomy. This point has not yet been settled and cannot be until extended and reliable reports in reference to it have been collected and tabulated.

The state of the urethra, prostate gland, bladder, and the kidneys often determines the surgeon in his choice of the two methods. In considering the state of the urethra in this connection two points must be determined:

1. How far the urethra will admit instruments.
2. How far the urethra will tolerate instruments.

In regard to the first, if a stricture will admit of dilatation, crushing is not contraindicated; but if the stricture is old, indurated, tortuous and accompanied with fistulæ, or if it is less advanced but rigors and fevers are produced at every attempt at dilatation, cutting should be chosen, for the reason that while it permits the removal of the stone it at the same time affords rest to the bladder and cure to the stricture.

In reference to the second, every surgeon is familiar with the difference in the temper of that canal under various circumstances and in different individuals. Its tolerance is at times wonderful. Instruments of the largest size may often be passed and retained for a considerable period of time with impunity. On the other hand, it is often so intolerant that the most delicate touch gives rise to great constitutional disturbance and even death. When this intolerant state of the urethra exists and cannot be removed by appropriate treatment, it will evidently be better to choose that procedure which will do least to ruffle the temper of the urethra. The single introduction of the staff by which the knife is guided into the bladder will certainly disturb the irritable urethra less than the necessarily frequent introduction of the lithotrite and aspirating tube used in the rapid crushing operation.

In the irritable urethra dependent on stricture nothing gives such prompt relief as a division of the stricture at the time the stone is removed by cutting. I had two cases under my observation and treatment recently in which the introduction of the smallest-sized sound caused rigors and intense urethral fever whenever used, yet after the division of the stricture and extraction of the calculi both patients recovered perfectly without rigors, fever, or other troubles.

The condition of the prostate gland must receive the special attention of the surgeon in the selection of an operation. As long as its enlargement does not interfere with the efficient use of instruments, as long as it has not caused serious trouble in the bladder by obstructing the perfect evacuation of the urine, and has not produced ammoniacal putridity of the urine, the crushing method should be chosen as the better; but when it is excessively enlarged in its central portion or is the seat of a tumor, rendering the urethral canal narrow and tortuous, causing difficulty in the introduction of the instruments necessary, a well

selected cutting operation should be chosen. Should the prostate be much inflamed or contain an abscess in its texture, the cutting operation should be chosen as offering the surest relief to the patient.

The enlargement of the gland is generally associated with other pathological conditions which interfere very materially with crushing, *e. g.*, inflammation, thickening and contraction of the bladder, together with ammoniacal urine. Under such circumstances lithotomy should be selected because it drains the viscus and leaves it at rest and at the same time affords a better opportunity for applying remedies to the parts affected. Besides, an incision, especially if bilateral, is often followed by diminution of the hypertrophied gland, and if a tumor exists in its substance, it may be enucleated, thus removing obstructions and often restoring the lost power of micturition.

The choice of operative procedure in diseased conditions of the bladder should be determined by the extent of the pathological changes produced in that viscus by the irritation of the stone. If these changes are not excessive and other conditions are favorable crushing may be used with the best prospects of good results, but if a high degree of chronic inflammation has been excited, especially if pathological changes have resulted in thickening of the walls and diminution of the cavity, and often sacculation of the bladder, cutting should be chosen, no matter how small or how soft the stone.

When organic diseases of the kidneys have made much progress and are accompanied with pathological changes in other organs, all operations are fraught with danger and surgeons should content themselves with palliating the urgent symptoms and making the remaining days of the patient as comfortable as his resources will permit. If, however, in these grave cases the sufferings of the patient become intolerable and cannot be mitigated, it is his duty to offer the chance of relief that can only be given by operative measures. When renal involvement is of less degree and uncomplicated the character of operative procedure should be decided by the environments of the case. The same rule should govern the surgeon in making his choice as in other cases without reference to the condition of the kidneys.

The result of operations for stone, in cases in which there are no complications and in which a judicious selection of the method has been made, is, in the majority of cases, the removal of all distressing symptoms and the complete restoration of the health of the patient. Each method, however, is under certain circumstances perilous, and attended with greater or less rate of mortality. The relative degree of mortality of the two methods has not and probably never can be estimated by statistics, because the cases submitted to crushing are selected and the operation is done under the most favorable circumstances, while cases submitted to cutting are taken indiscriminately and therefore often present the most unfavorable conditions, with all the difficulties of large stones, diseased bladders and bad constitutions. It has been estimated by statistics that one death occurs in nine and a half cases submitted to lithotrity; one in eighteen and a half in litholapaxy; one in eleven and a half in lithotomy as a general rule; but in the hands of Dudley only one death occurred in thirty-six cases; in Metteauer's one in forty-two; in Mott's one in fifty. Dr. Allan P. Smiths, of Baltimore, operated successively on fifty-two without a death, and in my own practice seventy-four cases, including patients of all ages (seven of which were over 60), were cut without the loss of a single patient. Two deaths then occurred in succession, neither of which could be attributed fairly to the operation. I afterwards cut sixty with one death. I feel certain that if correct reports could be obtained from all American surgeons who have practiced the cutting operation they would exhibit results equally as good as those referred to.

After a careful consideration of the data presented, I think it may be concluded that some of the cutting methods of operation should be chosen:

1. In children under 16 years of age.
2. In cases in which large and hard stones are to be dealt with.
3. In cases of encysted and of sacculated stones.
4. In cases of old, indurated, tortuous strictures of the urethra, especially when associated with fistulæ, and in persistant intolerance of the urethra.
5. In prostatic enlargements which interfere with the ready introduction and manipulation of instruments.
6. In prostatic overgrowths of the central portion, or in tumors of the prostate which may be removed during the operation.
7. In prostatic enlargement associated with residual and putrid urine.
8. In cases in which tumors of the bladder complicate stone.
9. In cases in which a severe chronic inflammation of the bladder is present and persistent.

The choice of crushing methods is based on four conditions:

1. Adult patient.
2. Capacious and tolerant urethra.
3. Small or medium sized stone, or, if large, of soft consistence.
4. Bladder capacious and free from severe and persistent chronic inflammation.

When selected under these circumstances, no operation in the whole field of surgery is more satisfactory or more successful in its results. The hazard of a well conducted crushing operation under these favorable conditions is *nil*; and if a

calculus could be detected and submitted to treatment in its early stage, before the general health is deteriorated and local involvements have taken place, no other mode of procedure would be desirable. Some enthusiastic surgeons are so confident of its innocence in all conditions that they have almost given up other plans of operation; but when the practice is extended much beyond the limit of the conditions above mentioned, the beneficial results are not equal, in my opinion, to those obtained from a well chosen method of lithotomy. To secure eminently successful and brilliant results from crushing, I am sure that cases submitted to either lithotrity or litholapaxy should be selected with the greatest judgment and discretion.

The old method of lithotrity, which advocated short sittings, with brief use of instruments, and left the expulsion of the fragments to the efforts of nature, has been almost completely superseded by the new method of Bigelow, in which stones are broken up so thoroughly by repeated application of the lithotrite, that all fragments may be evacuated through the aspirating tube and the entire operation completed in one sitting, however prolonged it may be. The great advantage of this method is in the rapidity of cure, the prompt removal of all fragments from the already overburdened bladder, and the brilliant success attending it. It is certainly applicable to a larger range of cases, is far more successful than the old method, and should be chosen, as a rule, in all cases in which crushing is indicated.

Notwithstanding an endless variety of cutting operations have been practiced since the days of Celsus, a few of which are regarded as valuable at the present time, no single method of lithotomy has received the unqualified approbation of the profession. Several of them possess merit, and it is the duty of the surgeon to familiarize himself with the minute details of all of the recognized procedures, in order that his resources may be multiplied. It is no doubt true that an operator becomes more familiar with an operation which he has often practiced, and will execute it with greater skill and safety; yet it is no less his duty to consider each case which comes under his observation, and to select that mode of operation which is best calculated to relieve the patient.

Some distinguished but ultra-enthusiastic surgeons have insisted that every cutting operation should be done by the supra-pubic method.

The supra-pubic operation, originated about the middle of the sixteenth century, soon fell into disuse, was revived by Mercier, and soon after extensively practiced by many of the great lights of that era, including the renowned Cheselden; but, owing to its great fatality, it soon fell into disrepute and was supplanted by the perineal operation. In 1879 it again came to the surface, and has since been growing in favor through the advocacy of Dulles, Peterson, Thompson, Guyon, Périer, and others.

Statistics of the operation as formerly practiced show the mortality to have been 30 per cent. Modern statistics, with all the improvements in the technique of the operation, and with the advantage of antiseptic appliances, show no better results. Statistics have further shown that the larger the stone, the safer, in comparison with the lateral, is the high operation, but that in stones less than an ounce in weight the mortality of the supra-pubic is greatly in excess of the perineal operation. I cannot, therefore, acknowledge that the supra-pubic operation is the only cutting method which should be practiced, but that it is one of the methods which should be chosen under certain circumstances. It has its advantages, and there is no doubt that it is the best operation when judiciously chosen. It should be selected for the extraction of calculi which are too large to be brought through the perineum without bruising and tearing the soft parts, and too hard to be fragmentized through the incision in the perineum. It should be chosen for encysted stones and for stones complicated with tumors of the bladder. As a general rule, the dangers attending this mode of operation are much greater than those attending the perineal method. It is without doubt easy of execution and certainly avoids injury to the rectum and interference with the genital apparatus.

The lateral method, modified and improved by Cheselden in the seventeenth century, and but little changed since, is more frequently resorted to than any or all other cutting operations; yet it does not satisfy anatomical requirements; its route to the bladder is not direct, there is a want of parallelism between the external and internal incisions, and it does not afford more space for the passage of the stone than some other perineal incisions.

There has been a growing conviction in the profession that incisions made in the side of the perineum are attended with more serious consequences than those limited to the centre; that severe hæmorrhage is more likely to follow lateral than central incisions, and the capsule of the prostate gland more likely to be divided.

The bilateral offers more space for the passage of a very large stone, but possesses no other advantages, and is objectionable because many important parts are divided which had better be avoided.

The median operation reaches the bladder with a smaller section of tissue than any other cutting operation, and a careful examination of the anatomical structure of the perineum clearly indicates that the raphé is the best and most acceptable point for the artificial opening necessary for the extraction of the stone. Nature seems to have purposed the median line for such an operation, for it is merely a fibrous septum formed by the

tendinous union of the perineal muscles, serving to separate the important structures of the two sides and permitting the surgeon's knife to reach and open the bladder without wounding any part of great importance.

The superficial parts of the perineum are composed of highly dilatable tissue, the tension of which is maintained by the raphé itself. If this is divided longitudinally, the dilatability becomes very great. Now, if the deeper seated parts were as dilatable as the superficial, the median would be, of all methods, the one to be chosen; but the prostate gland, with the aggregation of vesical muscular fibres surrounding it, offers a serious obstacle to the dilatation of the neck of the bladder, and the extraction of a calculus of considerable dimensions would be followed by dangerous bruising and laceration of the neck of the bladder; nor can instruments for fragmentizing the stone be safely used through such an incision. Stones which could be safely withdrawn in the median operation can be easily dealt with by crushing, as a general rule. If, however, to the median there is added a bilateral incision of moderate extent in the prostate gland and the muscular fibres encircling the neck of the bladder, the dilatation is capable of being carried as far as in the superficial parts. After a longitudinal section in the raphé extending through the perineal point, and a transverse section of the deeper seated parts, the dilatability of the perineal structure is almost incredible to one who has not tested it, and almost any stone which can pass out of the pelvic outlet may be extracted without any injury to the soft structures.

This is a modification of the median suggested by Civiale in 1829 and named by him "the medio-bilateral." It is certainly the best and safest cutting operation ever devised. The advantages of this over any other method of lithotomy are:

1. *That it opens up the shortest and most direct route to the bladder.* Passing in a straight line from one-third of an inch anterior to the verge of the anus to the neck of the bladder, it facilitates the introduction of instruments and the extraction of calculi.

2. *It divides parts of the least importance.* The incision following the median line does not encounter any structures of importance, nor does the slight bilateral section of the deeper parts do violence to tissues of vital consequence. The section does not pass beyond the limits of the prostate, nor the reflection of the deep-seated fascia. There is very little danger of wounding the rectum if proper precaution be used, although the knife does pass in very close proximity to it.

One of the great arguments used in favor of the supra-pubic and against all perineal operations is the possibility of injuring the seminal ducts, thus unsexing the patient. There is no proof of such injury in any perineal operation. I have paid especial attention to this question, and in a number of sections in the perineum of the cadaver I have found no lesion of the ducts; and the subsequent history of a number of my patients has shown that many of them have become fathers of families, and in no instance has a patient been left in the condition of an eunuch. In the medio-bilateral the incision passes almost directly outward from the sides of the prostatic urethra and could not possibly encounter the ducts. It may happen that an inflammation established in the perineal tissue does sometimes injure the ducts and cause sterility, but there is no proof that sterility is a frequent sequence of perineal lithotomy.

3. *It is almost a bloodless operation.* It is in the absence of this formidable complication that the medio-bilateral is seen to the best advantage.

The ligature and shirted catheter are in constant requisition in the lateral and bilateral operations; but when the incision closely follows the middle line, even if it encroaches on the bulb of the urethra, which it generally does, no vessels of any size are divided, since they have spread, so to speak, on the outer side of the raphé, while the cross section, passing only a few lines from the raphé, encounters no arteries of importance, so that the loss of blood is very small, seldom amounting to half an ounce. This immunity from hæmorrhage depends on the incision being made strictly in the middle line.

4. *It affords a passage for the removal of any calculus which can be safely removed through the perineum, and is the best route for free drainage.*

A frequent objection to the median and the medio-bilateral operation is that the incision made is not sufficiently large to permit the extraction of large calculi. It is true that the median is only suitable for the removal of small or medium sized stones, which, as a general rule, may be easily and safely removed by litholapaxy; but when a little nick is made on either side of the neck of the bladder, constituting the medio-bilateral operation, the deep-seated parts will admit of extension to almost any degree necessary for the removal of stones, which should be extracted through the perineum. I never make the bilateral section more than six lines in extent —just large enough to admit the finger into the bladder; the dilatation of the deeper parts is then easily and safely effected, provided it is done slowly and gently. To this part of the operation the adage, "festina lente," is peculiarly applicable. Its importance cannot be too strongly impressed on the operator. In some cases, especially in persons advanced in life, the neck of the bladder is firm and undilatable, even under continued gentle manipulation. When such is found to be the case, the incision should be enlarged to a sufficient extent on each side with a probe-pointed bistoury, guided by the finger, to permit the easy

extraction of the stone. When a stone is too large to be removed through the incision without doing violence to the soft parts, it should be fragmentized with suitable instruments and the fragments extracted through the perineal opening.

The crushing and withdrawal of stones through the perineum has been regarded with an unnecessary degree of fear. It is incomparably safer than forcible extraction of large calculi. That it is a safe resort is attested by numerous instances in which soft calculi crushed in the blades of the forceps have been removed piecemeal from the bladder without any evident ill effects. This has happened in a number of cases in which I have operated, and in many I have intentionally crushed large stones through the perineal wound without in the least increasing the risk of an operation.

If the stone is too hard to be readily crushed, the surgeon should not hesitate to make a suprapubic section, the success of which is greatly enhanced by the thorough drainage through the lower opening.

4. *It reduces the death-rate to the minimum.*

Possessing, as I think it does, the advantages mentioned, it is my conviction that the medio-bilateral operation, properly executed, is almost devoid of danger to life, and that in the absence of organic disease of the kidneys or other vital organ, every patient submitted to it will recover. It is followed by very little if any shock, by reason of the slight injury to important structures. It limits the loss of blood to the minimum, is seldom the cause of surgical fever, and in a majority of cases no unpleasant symptoms ensue. Patients are usually up in a week, and in from twelve to eighteen days, as a rule, the wound is entirely healed. In six cases in my practice the wounds healed by the first intention, no water passing the wound after the first day.

The statistics of medio-bilateral lithotomy have, so far as I know, never been collected and published. The late Prof. S. D. Gross, in the last edition of his valuable work on the urinary organs, did report twenty-two cases followed by complete recovery. At the meeting of the American Medical Association at Chicago, in 1877, I reported forty-six cases, all successful. Since that time I have operated by the same method on ninety cases, making in all 136 cases, with three deaths.

The success of the medio-bilateral operation has not been limited to my practice. Dr. J. R. Weist, of Richmond, Ind., has reported to me six cases in his practice with successful results. The late Dr. J. W. Thompson, of Paducah, reported twelve cases, all successful. My son, Prof. C. S. Briggs, of Nashville, has performed the operation in five cases, all successful. Dr. Wm. Wright, of Huntingdon, Tenn., operated on a boy 12 years of age with success, and Dr. D. M. Evans, of Union City, Tenn., did the operation on an adult with success, making an aggregate of 183 cases, with three deaths, one in sixty-one.

In conclusion I make the following deductions:

1. No operation is adapted to all cases.

2. Litholapaxy is incomparably superior to lithotrity, and should always be practiced in selected cases.

3. The supra-pubic should be chosen for extraction of very large and hard stones.

4. The medio-bilateral should be chosen in all other cases, because:

a. It affords the shortest route to the bladder.

b. It divides parts of the least importance.

c. It is the most bloodless operation.

d. It affords space for extraction of any calculus which can be removed through the perineum.

e. It affords the best route for drainage.

f. It reduces the death-rate to the minimum.

THE NON-SURGICAL TREATMENT OF STRABISMUS CONVERGENS.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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The non-surgical treatment of strabismus convergens is not a novelty. The text-books on ophthalmology mention the fact that some cases of strabismus convergens, if taken in time, notably in the periodic phase, are amenable to treatment, but the majority of authors quickly dismiss the subject, and hasten on to an elaborate description of the more popular operative process. There are, however, some exceptions, and among these, Dr. Landolt's excellent book on "Refraction and Accommodation" is prominent; with the clearness and precision which always characterize his work, he enters minutely into the details of the non-surgical method, pointing out its advantages and giving rules for its execution. In this book he strongly advocates its careful adoption; and in his paper read before the Ninth International Medical Congress, he again sounded a note of warning against operating on cases of strabismus convergens without previously testing with great care the action of the muscles when the proper relation between accommodation and convergence is reëstablished.

It is to be regretted, however, that Dr. Landolt did not emphasize more how much can be accomplished by restoring the balance between these two functions. If the tendency of the age were toward conservatism, a word would have been sufficient, but the trend is quite in the contrary direction and in this matter, at least, it is time to put on the brakes. The treatment of strabismus has suffered from careless execution in the past, and there is danger that it may again suffer from

indiscriminate and hasty operations in the present. It is really appalling to witness the assurance with which many tyros in ophthalmic surgery perform tenotomy, without a moment's hesitation as to the future results, and plenty of evidence can be adduced to prove that some who are not tyros, firmly believing that tenotomy is the only reliable method, operate too hastily to be consistent with safety. Why this condition of things should be so prevalent is difficult to explain, unless by the supposition that the former are ignorant of the claims that have been made for the non-operative treatment, and that the latter ignore them, being unwilling to allow sufficient time for this method to accomplish the result. That the result is accomplished in time, Nature, our best teacher, is constantly manifesting, for it is a well known fact that many cases of strabismus convergens are spontaneously corrected as the patient advances in years. If Nature accomplishes this feat when left to her own resources, is it not worth while to investigate her method of operation and profit by her teaching?

It is universally admitted that concomitant strabismus convergens, in hypermetropes, is caused by the excessive tension of accommodation necessary for distinct vision, overstepping the limits of the negative range of relative convergence; or, in other words, by the tension of accommodation exceeding the quota of the positive range of relative accommodation. The balance between these correlative functions being destroyed, over-convergence takes place, clear images are obtained at the expense of binocular vision, and strabismus is established. It should not be forgotten, however, that although the balance between accommodation and convergence is destroyed, their correlation is not abolished, and that it is in obedience to the law of reciprocal action which governs it, that over-convergence supervenes, and is maintained. On the survival of this correlation, the possibility of correction entirely rests.

Nature meets the difficulty by gradually limiting the range of accommodation, thus restricting the patient from excessive tension of accommodation, while it leaves the range of convergence unimpaired. When in the course of time these two functions approach equilibrium, the inciting cause having ceased to be operative the strabismus disappears, if the internus has not become permanently shortened. It will be noticed that the main point, in Nature's process, is the restoration of equilibrium between accommodation and convergence. The non-surgical method, in view of this fact, starts out to restore the balance between these functions, by removing the necessity for excessive accommodation, *i. e.*, by correcting the error of refraction. This, however, is not usually sufficient. Habitual accommodation persists in spite of optical correction. Mydriatics must be brought into operation, and by this means, the contracted ciliary muscle is temporarily set at rest. Then, if the internal rectus is not permanently shortened, a sometimes rapid, but generally a gradual relaxation of the muscle takes place, and *pari passu* the squint is diminished or corrected. In cases of periodic strabismus quite a rapid amelioration may be anticipated, and in many cases of alternating and in some of the established monocular form, the result is at times surprisingly quick. In the latter class of cases, however, an immediate correction is not to be expected, and when, as it usually happens, the deviating eye is quite amblyopic, something should be done in addition, to improve its vision, bring it into action and thus expedite the correction.

Experience teaches, and this is the point, that sooner or later the squint is corrected in a large percentage of the cases. Of course there are some cases in which the internal rectus is hopelessly shortened; in these tenotomy is the only remedy, but it must be first ascertained whether the internus is thus shortened, and this cannot be determined by correcting the ametropia and instilling atropin for a week. And now we have reached the point, where I will be found at issue with many of my professional brethren. A great many ophthalmologists claim that after having properly corrected the ametropia, instillations of atropin for a week will suffice to effect all the change in the degree of convergence that can be expected; in other words, that the muscle in this time has reached the limit of extensibility, and, in accordance with this belief, they proceed to operate at the expiration of this period, and before in many instances. The claim is erroneous, for I have repeatedly witnessed a gradual decrease in the angle of convergence, extending over weeks and months, and although it must be admitted that a case which has not been at all affected by atropin in a week, does not give great promise, the treatment must not be considered a failure until three or four weeks have elapsed. If gradual improvement is noted during the first week, and by careful examination the least amelioration is detected, the treatment is to be continued, even though it may take a long time, in the hope of securing a perfect correction and possibly a cure, without injuring the integrity of the muscle.

It may appear from these statements that I am waging war against tenotomy. Such is not my purpose. In certain cases, nothing can be substituted for a carefully performed tenotomy. But I certainly do protest against hasty operative interference when Nature, properly assisted by science, can and does accomplish the result. I am pleading for the internal recti muscles. Tenotomy needs no champion. But the interni most certainly need a protector.

The assertion that tenotomy of the internal rectus in concomitant strabismus convergens is a very simple operation and devoid of all danger

is, to say the least, as misleading as it is common. The technique of the operation is indeed simple, but the delicate discrimination requisite to decide, first, whether an operation is necessary, then what operation is indicated and, finally, how much of an operation to perform, requires an amount of judgment which at once places this operation beyond the pale of extreme simplicity. The second clause of the assertion is absolutely untrue. For if tenotomy is performed without previously having given the non-surgical method a thorough trial, the number of cases in which this method succeeds, will indicate the number which the operation over-corrects. In other words, if in a given case the angle of deviation be equal to 40° and it can be reduced without operative interference to 10°, and the operation is performed without giving this method a thorough trial, then all that goes to correct over 10° is over-correction, and in the course of time, an insufficiency of the interni and possibly a divergent strabismus will supervene.

The principal objection raised to this method is that tenotomy does in a few days what it takes several weeks and even months for the other method to accomplish. Now, in the first place tenotomy, if carefully performed, does not accomplish the result in so short a time; and in the second place, it should be borne in mind that the object of every physician is to do that which is ultimately best for the patient. If a case of strabismus convergens is operated before a thorough course of treatment has been carried out, it is simply trusting to chance whether the eyes are to remain parallel, or in the course of time suffer from insufficiency of the interni, or exhibit divergent strabismus. Time, which plays so important a part in this objection, sinks into insignificance and a matter of no consideration, when compared to the possible future discomfort of the patient. This objection certainly loses strength when analyzed.

The second objection is that while the method may be true in theory, it is impracticable in its application, and when put to the clinical test results in failure in the majority of cases. This being a practical objection, a practical answer is desirable, and this is best done by the recital of facts, thus allowing these to speak for themselves.

The danger of hasty operative interference was forcibly brought to my notice about nine years ago, when after having used atropin for five or six days, I operated on a very marked case of established strabismus convergens. I was in the habit of allowing the atropin more time to do its work, but there was so much deviation in this instance, that I considered the operation perfectly safe. The result immediately after the operation was very satisfactory, although slight convergence persisted, but about five months afterward the child was brought back to me with a very perceptable divergent squint, and the mother expressed herself very strongly on the subject of operating on eyes and making them go "the other way." From that date I have had no more cases of operative divergent strabismus, of my own manufacture, because I have never operated upon a case of strabismus until I had become perfectly satisfied that the non-surgical treatment was insufficient. My experience with this method has been uniformly gratifying, both as a curative process and as a preliminary process to the operative treatment, and I have always strongly advocated its use both in the lecture room and in the clinic. The patients were always found perfectly willing to undergo the course of treatment, and in many instances a decided preference in its favor was expressed. The discomforts accompanying the use of the mydriatic, when complained of, were much mitigated by the use of stronger glasses for near work, and the orthoptic measures; exercises for the amblyopic eye, etc., were quite well followed in the majority of cases. The latter, however, it must be admitted is the most difficult part to have successfully carried out, but then the orthoptic measures are not the incumbrance of this method alone, for if it is desired to obtain an ideal cure of strabismus, *i. e.*, binocular single vision, it will be necessary to bring these measures into operation as a compliment to tenotomy.

In the clinic a good deal of difficulty is experienced in prevailing upon patients to strictly follow out the directions given for eye exercises; for this reason I have not laid so much stress on this part of the treatment in clinical practice. And in order to ascertain the results obtained by correction of the ametropia and the use of atropin alone, I began on the 1st of January, 1889, to keep a private record of all the cases which applied for relief of this deformity in my service at the Illinois Charitable Eye and Ear Infirmary. The record is not as complete as might be desired, but it nevertheless shows in a conclusive manner what can be accomplished by the non-operative treatment.

The method pursued was as follows:

1. Measurement of angle of convergence, obtained with perimeter by Landolt's method. Examination of motility of squinting eye. Ophthalmoscopic measurement of refraction. Subjective examination of manifest hypermetropia. Test of vision. Instillation of atropin once or twice a day for a week, then measurement of angle of deviation. Measurement total hypermetropia.

2. *Treatment:* Glasses were prescribed correcting the total ametropia; atropin to be used daily until parallelism was obtained. Then gradual decrease of dose; until accommodation was performed without over-convergence. If after the effects of atropin had passed off, over-

convergence reappeared, atropin was again ordered until desired result was obtained. The patient was then discharged with instructions to use the glasses constantly, and report if any tendency to squint should be noticed.

From January 1st to June 1st, twenty-five consecutive cases are recorded. Of these there were of periodic strabismus 3, 1 cured, 2 much improved; 1 (angle of deviation decreased from 25° to 5°). Alternating strabismus, 1 case, improved, axis nearly parallel. Established monocular strabismus convergens, 21 cases. The right eye deviated in 15, the left in 5.

Results: In 10, parallelism. In one of these slight divergence was noted, due to operation 3 years ago; 3 much improved, angle ranging from 5° to 8°; 5 not affected by treatment; 3 no record.

Parallelism was recorded in two or three cases, while still under atropin. Unsatisfactory as this may seem, it is so only in appearance, for if parallelism can be induced with atropin, it is only a question of time when it will continue without the mydriatic.

As children give very unsatisfactory answers when tested for glasses, they were prescribed by ophthalmoscopic measurement made under the effects of atropin. Measurements made before using atropin are unreliable. I may add that no difficulty was experienced in making the examinations and that the patients or their parents, were perfectly willing to procure the glasses and follow out the course of treatment. The details will be found noted in the tabulated record appended.

Without pretending to draw any positive conclusions or make sweeping generalizations from the twenty-five cases, the number being too small, I present them as illustrative of what the non-surgical treatment can accomplish even when deprived of that most valuable auxiliary, orthoptic exercises. To the fact that the record is not complete enough to satisfy the hypercritical, I am perfectly sensible, but the most important data will be found noted with as much accuracy as circumstances would permit. Out of twenty-one cases of confirmed monocular strabismus convergens, ten were corrected, and three have been so much improved, that total correction is simply a question of time. Of three there is no record. Only five cases remained unaffected, and will be operated upon in the near future. Does not this record justify a thorough trial of the non-surgical method?

I beg you to believe, gentlemen, that I should not have presumed to present myself before you as an advocate of this method of treatment, if armed only with an experience derived from so scant a display of cases, but I am supported by a profound conviction of its value, the result of observations ranging back over nine years, during which I have given these cases considerable attention; and the motive which prompts this paper is not I assure you, a spirit of criticism, but an earnest desire to see a method which I know to be good, put more generally into practice. Careful observation and inquiry have elicited the information that hasty operative interference in concomitant strabismus convergens is unfortunately very common. Experience teaches that it is attended with danger. Is it not time to call a halt in our rush for radical measures, and consider carefully a method which commends itself, not only by its rationality, but, by its ability to correct in many instances this common deformity, and in others to prepare in the way for a safer and more accurate operative procedure.

Date.	Name.	Age.	Duration.	Diagnosis.	Degree.	Refract.	Vision R.E.	Vision L.E.	Treatment.	Duration.	Remarks.
Jan. 10.	A. S.	14		R.E.S.C.	50	Hm. 3 H. 5.	20–30	20–20	Oper. 3 yrs. ago.	May 2 (3 weeks).	Slight divergence.
" 26.	R. D.	13	2 years.	R.E.S.C.	35	Hm. 3 H.	20–30	20–20	Atr. glass.	Mar. 18 (3 "	Much better.
Feb. 7.	A. P.	15	1 yrs.	R.E.S.C.	35	L.E. 1, 3 R.E.H. 5	20–20	20–20	"	Mar. 14 (3½ mos.)	No effect (Aug. 20).
" 9.	C. L.	5	10 mos	R.E.S.C.	25	H. 2.50.			"	May 8 (3 mos.)	Much better.
" 16.	C. B.	7	7 mos	R.E.S.C.	22	H. 4			"	April 23 (2 mos.)	Corrected.
" 16.	F. C.	15	15 yrs.	R.E.S.C.	25	H. 2.	20–100	20–20	"	May 15 (3 mos.)	Much better.
" 21.	M. S.	9		All S.	20	H. 5.			"		
Mar. 12.	T. O'K.	6	3 yrs.	R.E.S.C.	45	H. 2.	A.	G.	"	April	No improvement.
" —	V. O. M.	10	7 yrs.	R.E.S.C.	45	H. 6.	A.	G.	"	April 28.	Parallel nearly.
" 21.	A. K.	11		L.E.S.C.	50	H. 5.	20–40	20–100	"	April 18.	Corrected.
" —	M. T.	8	7 yrs.	R.E.S.C.	30	H. 3.	20–50	20–20	"	April 28.	"
" 16.	E. M. B.	15		P.S.C.	15	H. 4	G.	G.	"	April 11.	"
" 16.	E. V.	5		R.E.S.C.	15	H. 5.	A.?		"	April 25.	
April 15.	C. B.	5	5 yrs.	L.E.S.C.	25	H. 4.50.		A.	"	May 4.	No better.
" 25.	P. M.	7	2 yrs.	R.E.S.C.	25				"		
May 2.	M. S.	7	3 yrs.	R.E.S.C.	30		G.	A.	Atr. glass.	May 16.	No better.
" —	L. B.	20	19 yrs.	L.E.S.C.	55	H. 2.			"		Better.
" 14.	W. T.	19		R.E.S.C.	40		20–50	20–20	Atr. glass.		Did not return.
" —	C. D.	2		P.S.		R.H. 1 L.H. 1.50			"		
" 16.	D. K.	13	1 yr.	L.E.S.C.	35	H. 3.50.	50–20	20–200	"	June 1.	Corrected.
May 16.	A. B.	13	9 yrs.	R.E.S.C.	35	H. 6.50.	20–20	20–20	"	June 4.	"
" 18.	T. H.	19	18 yrs.	R.E.S.C.	30	H. 4.	20–40	20–20	"	June 14.	No better.
" 24.	M. M.	7	4 yrs.	R.E.S.C.	25	H. Ast.	20–200	20–20	"	June 4.	Corrected.
						H. 3.	20–60	20–20	"		"

Parallel, 10; diverg., 1; M. B., 6; { 3 nearly parallel. / 3 much improved. N. B. 5 N. R. 3.

170 State Street.

DR. KNAPP said: For many years I have been

in the habit of trying the non-surgical treatment in all young cases. A certain number have been cured, but the number was not so great as in Dr. G.'s series. It is a minority, perhaps not even what is called a respectable minority; certainly it does not reach 20 per cent. I have never operated before a fair trial with glasses has been made, for at least three months, mostly six months or a year or two. It seems that Dr. Gardiner has not drawn into the circle of his investigations the remaining latent convergence, which in my experience is constant or almost constant, which exists in most cases without asthenopic complaints.

Dr. Ayres, of Cincinnati, said that he considered the sentiment of the paper in the right direction. We all operate much less frequently than we did a few years ago. He had a case where glasses were worn for eight years, and the eyes were then parallel and there were no asthenopic symptoms. I encourage patients to use glasses, and try to keep them under observation for a year or two, if possible. I would hesitate to operate unless I could not see the effects of glasses for a period of a few months at least.

Dr. Keyser: I have been for some years carrying out the idea that Dr. Gardiner has presented, but I must suggest that a longer time be given before any operations are made. I agree with Dr. Knapp that it is necessary to wait a longer time than two or three weeks. It is necessary to wait three, four and six months. I have had some excellent results with the correction of the ametropia only after three to six months. The operation of tenotomy should not be made too soon after the correction. I always wait a considerable time, especially if I see any changes for the better are showing themselves. I lately exhibited to my class a boy with most perfect success of the correction of the strabismus with the correction of the ametropia, which took six months for the cure.

Dr. J. L. Thompson, of Indianapolis: Every year added to my experience makes me more cautious in recommending an operation for the cure of strabismus convergens, and causes me to urge the more frequent trial of the proper lenses instead. We should do all in our power to educate the people concerning this matter. Often have I prescribed glasses for children under 3 years of age and in one case before the second year, and in several this plan has sufficed without my having had to operate. Again, in cases where this has not been sufficient after six months, atropin has been used for three months in addition to the glasses, but the parents have also been urged to practice the defective eye many times a day. They must not simply be told that this is necessary, but they must also be informed that the state of the child's vision is almost altogether within their power. They must carry this injunction as did the Jews their laws, as frontlets between the eyes, written also on their gate posts, that, going in and out, to be read and practiced. Operations for strabismus are rarely even what we desire them to be. Perfect successes are seldom obtained, and in some, when the eye has become amblyopic from exclusion long before the operation, we may have an excellent immediate result from strabotomy, and this may continue for months or a year; and yet, in some of these, when they step into our offices, years afterwards, with their eyes turned out even more than they formerly turned in, such a terrible feeling of goneness comes over us that we wish they never had been touched. This must occur to all operators, no matter how skilful or expert they may be. If, then, perfect results rarely obtain from operative procedure in such cases, we should so educate the profession and, through them, the community, as to cause them to seek early advice, in order that benefit from glasses and other treatment may be entered upon.

Dr. Chisolm said that there was a general disposition to defer operation in crossed eyed children until they reach 8 years of age at least. We are frequently consulted by much younger children. During the delay or interval before the operation of tenotomy a good length of time admits of the use of glasses and atropin to allay excessive muscular spasm. For months this course is usually pursued, but my experience is that I do not get the large percentage of cures that others have obtained. I should think that 10 per cent. of cures would be a larger percentage than my experience would warrant. Yet the method was a good one and is now generally adopted.

Dr. Stevens said: The view of procedure in strabismus will depend somewhat upon the view which we take of the nature of the cause of the defect. If we accept without question the theory of our great master, Donders, we shall act differently from what we would do were we to accept that of Schweigger and many others. If we are dealing with a simple functional trouble, we treat it as a functional trouble. If, however, we are dealing with anatomical conditions, we must deal with it by mechanical measures. There is a large proportion of cases of apparent convergent squint which, in my opinion, depend upon a vertical deviation. If we operate for convergent squint in such cases, we shall of course induce, at a later period, divergent strabismus. We can not, it appears to me, make sufficiently accurate estimations of the angle of strabismus by the perimeter. We should use the diplopia tests, and a full correcting operation should only be done by these tests.

In closing the discussion Dr. Gardiner stated that he had been misunderstood regarding the length of time he would follow up the treatment, the period of one month being the *minimum limit in all cases.*

ANÆMIA AND NASAL STENOSIS.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY H. HOLBROOK CURTIS, M.D.,
OF NEW YORK.

I think we may be justified in assuming that recent progress in nasal surgery has instituted a new era in laryngology, otology and rhinology. The reflex neuroses dependent upon nasal stenosis have been elaborated.

Simple asthma and hay fever, in a vast majority of cases, have been brought within the list of curable complaints, and to-day the most stubborn opponents to the employment of free surgical procedures within the nostrils are one by one entering the van with those who have long since disregarded the ancient traditions of laryngology. In otology, chronic otitis media and tinnitus are admitting of better explanation, and a rational treatment is being instituted whereby, to the credit of the rhinologist be it said, thousands of the deaf and distracted are finding themselves susceptible of relief. If the example set by this Association, in uniting the departments of otology and laryngology, be followed by our local societies, the science of otology may be advanced beyond present conception. It is very easy to generalize upon the brilliancy of certain operations, and enough has been written and read before the various laryngological societies of the United States during the past five years to conclusively prove that good work has been done and much benefit derived therefrom. It is the province of this paper, however, to touch upon a single condition, namely, anæmia and its relationship to nasal stenosis. In a paper read before the Ninth International Medical Congress at Washington in September, 1887, I attempted to classify the various deformities and conditions which produce stenosis, and to elaborate the great gain to be derived from radical surgical procedures in their treatment. At that time the facts were deduced from some 150 cases operated upon with the nasal saw, and about 75 in which was employed the nasal trephine. The conclusions were simply drawn from the great constitutional relief experienced by the patients, and from personal observation. The one item of mathematical accuracy in the cases there described, however, was expressed in the reported gain in body weight. Since that time my operative cases with the trephine have exceeded 400. Aside from the fact that one might be justified, from these figures, in forming a pretty exact estimate as to the value of the work, it has been my endeavor to keep more exact data as to the constitutional improvement after operations for the relief of nasal stenosis. In my recent cases statistics as to weight, chest measurement, capacity of lungs, and spectrum analyses of the blood are carefully tabulated. While we will not go into the details of the quite unique results the remainder of the table shows, let us dwell for a few moments upon the consideration of the analysis of the blood.

The improvement in color of the skin, which phthisical patients especially exhibited after the relief of a marked stenosis, suggested the possibility of keeping a record of the relative amounts of oxyhæmoglobin existing in the blood at the time of operating, and again some weeks afterward. The most ingenious hæmatoscope of Hénocque enables one to do this with even greater exactness than with Fleischl's hæmometer, and also offers special advantages in determining the "activity of reduction," so called in the change of arterial blood to venous. The spectrum of oxyhæmoglobin may be obtained by holding the spectroscope at an angle over the thumb nail and observing, after quickly ligaturing the thumb below, how soon the two absorption bands of oxyhæmoglobin disappear; or, in other words, in how many seconds the oxygen is absorbed by the capillary network, the spectrum of reduced hæmoglobin being invisible by this method. The activity of reduction is altered by fasting, exercise, repose, cold, heat and electricity, and more or less by all pathological conditions. In a state of health the absorption bands disappear in about one minute; in altered physical states the limitation varies between twenty-five and ninety seconds. This fact is assumed by Hénocque to possess a clinical importance in certain diseases, but it does not interest us here.

The hæmatoscope of Hénocque consists of two glass slides superimposed in such a manner that they are separated three-tenths of a millimetre at one end, but in contact at the other, the length of the slide being 60 millimetres. We thus have a prismatic space between the glass slides varying from zero to three-tenths millimetre, into which we allow a few drops of blood to flow. Then, by placing the slide under the spectroscope and moving from right to left, for every millimetre we advance the blood layer increases five one-thousandths of a millimetre (five micra). In a series of careful experiments with solutions of oxyhæmoglobin, normal blood, etc., it has been found that a solution of 14 per cent. of oxyhæmoglobin of a thickness of 70 micra (70 one-thousandths of a millimetre) presents under the spectroscope the two characteristic absorption bands of oxyhæmoglobin between the lines D and E. The division of the lower plate into a scale of 60 millimetres makes it possible to express in thousandths of millimetres (micra) the exact thickness of the blood layer, and hence enables the calculation of a table which at a glance shows the percentage of oxyhæmoglobin; for if we are unable to get the bands of oxyhæmoglobin distinctly and of equal obscurity until the slide has been moved to the division 28 millimetres read on the

scale of the lower slide, we have required just twice the thickness of the blood layer to obtain the characteristic spectrum; hence the blood contains but 7 per cent., or one-half the normal percentage of oxyhæmoglobin. One has consequently only to read the number on the scale corresponding to the slit of the spectroscope and, by consulting the table, ascertain immediately the percentage of contained oxyhæmoglobin. By this method of examination, which is the quickest and as accurate as any of the methods yet advanced, we have a tolerably definite standard by which to ascertain the condition of the blood.

J. Loos has reported that careful tests made in von Jaksch's clinic have led him to place more reliance in the hæmatoscope for rapid demonstration than on any of the numerous hæmometers, hæmatimeters, etc., yet discovered. The rapidity and ease with which this instrument may be employed makes the method contrast sharply with the tedious detail of other means. By it one is enabled to estimate the improvement of a patient while taking iron, and to observe, unfortunately, that the percentage of oxyhæmoglobin decreases at once upon discontinuing the dose. On the other hand we demonstrate that the increase brought about by opening the nasal passages remains constant. The physiology of nasal breathing has been made the subject of a carefully prepared thesis by E. Bloch, of Freiburg[1], who has determined, by a most exhaustive series of experiments, the laws which govern nasal respiration, the most important of which is the following: "Inspired air, in its passage through the nose, gains in heat five-ninths of the difference between its temperature and that of the body," which, expressed mathematically, would be: $x = \frac{5}{9}(98\frac{1}{5}° - t.)$, t. being the temperature of the inspired air; x will represent the added increment of heat resulting from nasal respiration. The important bearing this has upon the respiratory act is self-evident, and it is chiefly due to the restoration of a process which adds so much heat and aqueous vapor to the inspired air as does nasal breathing that the extraordinary good done the individual is accounted for.

Patients with nasal stenosis, as will be seen by referring to the tables, are invariably anæmic. The twenty cases given below are taken without selection, and represent an average of the blood analyses found in these conditions.

It is not the intention of this paper to inquire further into the specific causes which bring about the increased oxidation, as shown in the tables, nor to attribute to the relief of nerve strain, or to the increased lung capacity, their respective shares as elements of constitutional improvement, but to simply advance the proposition that anæmia is due in very many cases to nasal stenosis, a fact which was commented upon by me several years before I made use of the hæmatoscope to demonstrate it.[2]

	Time elapsed after operation.	Weight.	Chest.	Spirom.	Oxyhæmoglobin. Per cent.	Increase Percent
No. 1,	8 weeks.	130–134½	30 –30	205–215	6.9– 9.3	2.4
No. 2,	8 "	132–137	31½–32	245–256	7.5– 9.5	2
No. 3,	10 "	143–150	33¾–33¾	185–190	5.5– 9.3	3.8
No. 4,	10 "	126–129	31½–31½	200–219	7.5– 8.5	1
No. 5,	13 "	115–126	30 –32	215–265	4.5– 9.5	5
No. 6,	3 "	140			9.5–10.0	0.5
No. 7,	4 "	134		150–165	9.3–11.0	1.7
No. 8,	1 "				10.0– 9.3	0.7
No. 9,	10 "	139			6.0–11.5	6.5
No. 10,	6 "	120		145–155	12.0–12.5	0.5
No. 11,	3 "	196–200	42	320–330	14.0–14.0	
No. 12,	4 "	92			7.8– 9.0	1.2
No. 13.		140–149		190–220	6.5– 8.0	1.5
No. 14,	6 weeks.	127	27½		9.3–11.5	2.2
No. 15.		110	28	120	3.5	Refused.
No. 16,	10 weeks.	134			11.5–11.5	
No. 17,	8 "	211			7.5–12.0	4.5
No. 18,	7 "	126–132	29½	115–130	6.5–13.0	6.5
No. 19,	2	170–171		295–315	10.0–10.0	
No. 20,	9 "	165–168		275–279	9.3–12.0	2.9

The cases presented represent markedly deflected septa, or enchondroses, simple turbinate hypertrophies, or polypi, not being included (in which latter condition the percentage gain is much greater than in the present compilation). It has been the intention to tabulate an average run of patients referred for operation. It may be interesting to take up one or two cases as examples. For instance, No. 5 presents the following history: Girl, aged 18, with nearly complete stenosis on both sides, a mouth breather and profoundly anæmic. Her family physician has considered her trouble to consist of consolidation of both apices of the lungs. In thirteen weeks after freeing the nostrils her entire condition was transformed, her chest having expanded 2 inches, and the sallow complexion giving way to the ruddy hue of health. No. 14 I include as one of the few instances in which I have found a normal blood state with a deflection of the septum narium. The case, however, is that of an athlete whose time is mostly spent in the open air. No. 9 is of interest because of his pronounced anæmia and from the fact that he possessed a hæmorrhagic diathesis, it having been necessary to ligate his extremities to stop the bleeding after operation. This is the only case among those tabulated in which any treatment was combined in order to overcome the impoverished condition of the blood.

By observing very many cases I have come to the conclusion that the increase of oxyhæmoglobin in the blood after operations on the septum is directly proportional to the relief afforded an impeded nasal respiration. This increase is constant and averages about 2 per cent. in the six weeks following operations in which the stenosis does not amount to more than 50 per cent., that is to say in cases where the nose is doing but half its work.

If the amount of oxyhæmoglobin is directly

[1] Archives of Otology, Vol. xvii. No. 4.

[2] "Headaches," by Allan McLane Hamilton.

proportional to the number of red blood corpuscles, this increase may be expressed by an increase of 100,000 corpuscles to the cubic millimetre.

Cases should not be operated upon whose blood shows, by spectrum analysis, lower than 6 per cent. of oxyhæmoglobin. In four cases of alarming hæmorrhage this state was always observed. As reference to the table makes other matters I have touched upon apparent, I will postpone the further consideration of the subject for another occasion.

A CASE OF SCLEROSING MASTOIDITIS OCCURRING SUBSEQUENTLY TO PURULENT MASTOIDITIS INTERNA—OPENING OF MASTOID—EXPOSURE OF DURA MATER—RECOVERY.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 25, 1889.

BY J. A. LIPPINCOTT, M.D.,
OF PITTSBURG, PA.

Sclerosing or eburnating mastoiditis is a disease characterized chiefly by pain, continuous, grinding pain—pain so remorseless and incessant as to stamp upon the features a peculiar expression, appealing, yet hopeless, like that on the face of the Beatrice di Cenci. The pain centres in the mastoid, but radiates over the whole side of the head. I have seen the pain of mastoiditis eburnans closely simulated by the reflex pain of a diseased tooth; and in suspected cases an examination of the teeth ought to be made by a competent dentist.

The affection is comparatively rare in this country—at least not many cases have been reported in the journals. My own experience is limited to two cases, the first of which was reported at the meeting of the American Otological Society in July, 1884, and was that of a young lady who, after twelve months of treatment, local and constitutional, and of the most varied character, was finally operated upon, the mastoid being opened with a drill down to the antrum. Complete relief followed the operation, but unhappily lasted only a year. A second and more complete operation has been since suggested, but the patient is not yet ready to give her assent.

The following case, apart from the rarity of the disease, seems worthy of record on several grounds,—the origin of the trouble, its obstinacy, the opening into the cranial cavity, and the final result.

Miss F. M., æt. 24, had in childhood had frequent attacks of earache on the left side but never otorrhœa. These attacks gradually ceased, but she continued to suffer frequently from quinsy. In Sept., 1885, while pursuing her occupation—dentistry—in St. Paul, Minn., she had what she describes as a peculiar attack of sore throat, affecting the left side, which presently disappeared, leaving a severe continuous aching in the mastoid region. Leeching and other local and constitutional treatment proving ineffectual, Dr. Fulton[1] opened the mastoid and found a large abscess which he carefully washed out. The result was quite satisfactory, the wound soon healing, and the pain being relieved entirely. Six months later, in April, 1886, the earache returned, and from that time until I saw her in the following July, continued to increase in severity. When she consulted me I found the following condition: A vertical, linear, depressed cicatrix behind the ear. Above the scar, slight swelling, rather tender to touch. External auditory canal normal. Mt. slightly shrunken, lustreless, and dusky in color. No light-cone. Watch of forty inches hearing-distance heard on contact. Voice at ten inches. Air conduction better than bone conduction. Eustachian tubes pervious. Politzer bag causes transient distress in left ear. Throat and nares healthy looking. Right ear normal in appearance and function. The pain in the left mastoid was almost constant, but was subject to exacerbations.

In view of the fact that an operation had already been performed, and by so accomplished an operator as Dr. Fulton, I naturally hesitated to subject the young lady to further operative procedure. I must remark, parenthetically, that at this time I was not aware of the previous suppurative character of the case, as Dr. Fulton's report of it had not yet been published. I made the diagnosis of sclerosis, and I supposed the disease to have been sclerotic *ab initio*. I suggested to her family physician, Dr. E. S. Riggs, of Allegheny, that the treatment which he had already instituted be continued. Accordingly, for three months an energetic course of tonics and alteratives was maintained, and various applications, revulsive, and emollient, were made to the painful region.

During this period, instead of diminishing, the pain steadily increased in intensity, necessitating the frequent administration of anodynes. In the latter part of October, at the urgent solicitation of the patient, and with the aid of Dr. Riggs and the resident staff of the Allegheny General Hospital, I made with drills and chisels a pretty large opening about five-eighths of an inch deep in the mastoid process. The bony tissue was dense and firm, the cellular structure having almost completely disappeared. There was some hyperæmia especially of the deeper parts.

This opening was maintained and poultices ap-

[1] This case was without doubt one of those reported in the interesting article by Dr. Fulton in the Proceedings of the 9th International Congress.

plied, for nearly two months. I shall not weary you with details. Suffice it to say that the operation accomplished nothing. The patient's sufferings continued to increase, being but slightly mitigated by the large and frequent hypodermatic injections of morphia administered. Weary, sleepless nights succeeded days of monotonous pain. Convulsions set in. Appetite failed, and emaciation and debility became more and more marked. The face assumed a haggard, almost despairing expression, and the *morale* of the patient became so weakened that the worst was dreaded. Examination of the urine, as well as of the eyegrounds at this time proved negative.

Seven months after the last operation, viz: toward the end of May, 1887, I was surprised by a visit from Miss M., who drove to my office for the purpose of insisting on one more attempt being made. She said she could no longer endure the slow agony, and would prefer to die on the operating table. On consultation with Dr. Riggs, in whose judgment I had very great confidence, it was decided to accede to the patient's wishes. She was therefore again etherized May 25th, 1887; and, the soft tissues, having been well reflected, the mastoid was reopened. My object now was to make as thorough an excavation as I dared. For this purpose a large and deep opening was made as before with drills and chisels; and then the cavity was slowly and cautiously enlarged by means of the conical drill, until the end of my thumb could enter and move freely in the interior. The thickness of the process proved less at one point than I had anticipated, and, on withdrawing the trephine, I found that I had exposed the dura mater. The opening was fully one-fourth of an inch in diameter, and was at the anterior part of the bottom of the wound.

Circumstances prevented my seeing the patient for some time, and the subsequent treatment was conducted by Dr. Riggs, but I learned later that on the termination of the anæsthesia, the pain had entirely disappeared. Convalescence was speedy and uneventful. The wound was kept open for about six weeks, and then allowed to cicatrize. Dr. R. informed me that, the day after the operation, he punctured the dura mater where it bulged into the wound with a hypodermatic needle, and drew off a small quantity of clear fluid.

In Febuary, 1888, Miss R. came to inform me of her progress. She had resumed work in August, two months after the operation, and, with the exception of a very slight earache from cold, in October, she had been absolutely free from pain. She was enjoying excellent health, and her appearance was bright and cheerful. A deep furrow was to be seen in the mastoid process. The membrana tympani looked just as it did at the first examination, and the hearing was also unchanged. A final examination made a few days ago, revealed the same happy exemption of pain, and practically the same local appearances. Moreover, the patient states that she feels that she is entirely cured, since attacks of cold never affect the ear now as formerly.

If it is permissible at all to generalize from my limited experience, it seems to point clearly to two conclusions: first, that no treatment which does not include operative interference is of the slightest avail in the affection under consideration, and secondly, that no operation, which does not involve a pretty complete removal of the internal structure of the mastoid, will be apt to prove permanently beneficial. In the first case a partial operation gave relief for a year. In the second, without reference to the history of the case before coming under my care, one partial operation gave no relief at all; while a second, which left very little of the mastoid remaining except the shell, has conferred absolute immunity from pain, which has continued now for two years, and bids fair to be permanent.

The difference between opening a mastoid for sclerosing mastoiditis and the ordinary operation of perforating this structure for suppurative mastoiditis interna is so great that it can with difficulty be appreciated by one who has not operated on both classes of cases. In trephining for purulent inflammation a few turns of the drill, or a few blows on the chisel, and you have forced your way through a comparatively thin wall, and your instrument finds itself either in a cavity, or among the loose and friable material of the mastoid cells. Besides, you are generally rewarded by the appearance or escape of pus. But, in operating on a sclerosed mastoid, penetration is effected slowly and laboriously on account of the ivory-like density of the bone. Moreover, it is sometimes extremely difficult or impossible to find a cavity at all, no matter at what depth, because the cavity of the antrum, in an old case, is apt to be so encroached upon by the eburnating process as to be almost obliterated. Furthermore, you do not find pus—you do not expect to find it. You simply make what you suppose to be a sufficiently large and deep opening, and then you stop, trusting that the result may be good.

I can not close this paper without expressing my sense of the value of an instrument which I have heard "damned with faint praise." I refer to the conical drill. It seems to me that, in case of penetration into the cranial cavity—and this accident, in operating for sclerosing mastoiditis, it is by no means unprecedented—less harm is likely to be done to the intracranial tissues with an instrument like this, which does its work slowly and steadily, than with a chisel, which may plunge abruptly, in spite of the greatest skill and care, into the lateral sinus. On account of its tapering and rounded form a sudden plunge is impossible, since, even if the apex has made an opening, the body of the instrument is prevented

from entering. Besides, from the absence of any sharp, cutting edge, the contents of the cranial cavity are almost secure from laceration or serious injury.

A NEW DOUBLE CATHETER FOR UTERINE INJECTION.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. CORDES, M.D.,

ADJUNCT TO THE MATERNITÉ OF GENEVA, (SWITZERLAND); CONSULTING PHYSICIAN TO THE MISÉRICORDE, ETC.

In our days of asepticism every instrument, or part of instrument, must be thoroughly scrubbed in every corner where the microbes take their abode. Following this principle, I had made in Paris a vesical catheter, made of two pieces, one sliding into the other, so as to be separable in two corresponding grooves, and being very easily cleansed with the brush. Of course the blind end, near the eyes, is filled up to the level of the eyes, with metal, so as to leave no corner or uneven space, or cul-de-sac to lodge the dreaded microbes.

That was all right, as long as the vesical catheter alone was concerned, in which the fluid supports no pressure, and which is short. But when I tried to apply this contrivance to the long sound for uterine irrigation in which the antiseptic fluid is forced with some power, I found no maker could make it tight enough; a large quantity of the fluid ran out, along the sides of the grooves. If it was nearly tight then the slide would not run easily in the groove. Moreover it would have been a difficulty almost insuperable for our makers to give to the instrument the sigmoid curve which is so invaluable, for the sliding part would not follow that double curve. Then it occured to my mind that if, instead of having a tube for the access of the fluid in the uterus, (this tube being constituted by the two grooves, as in the vesical sound) and a groove for the return of the liquid with débris, as in Bubin's sound, I could have two open grooves, and the instrument would be very easy to cleanse with a common nail brush.

These grooves in my instrument are converted into tubes by the introduction of the sound in a sheath of soft rubber, which adheres enough to the sides of the grooves to make the instrument sufficiently water tight. I was surprised to see how easy the return of the fluid and débris was rendered.

Up to this date, April the 21st, the instrument has been made of nickled metal by Collin, in Paris. But I hope to succeed in having it made of hard rubber which is not corroded by the bichloride of mercury solution, or any liquid. It has also to be made with the sigmoid flexure of Bozeman double catheter, which makes its introduction easier in some cases.

Some criticism of the double current sounds now in use may be proper. In the modification of Bozeman's double catheter, presented by Dr. Howard A. Kelley at the Obstetrical Society of Philadelphia, Pa., March the 1st 1888, the screws, nuts, etc., are not easy to cleanse. Any tube, especially a small one, is not easily kept clean. I know this instrument only by the figure given in the *Am. Jour. Obstetrics.* The internal tube of the Fritsch, which I found used at the Maternité, does not admit the brush. Besides, the openings, or the eyes being on the sides, the fluid flows out laterally, not coming in proper contact with the fundus uteri. In Budin's "horse-shoe" tube the exit of the fluid is well provided for, the injecting tube being semi-lunar, which makes disinfection, however, next to impossible, except by passing the instrument through the flame, rendering it necessary for it to be made of metal.

Doléris' dilating sound is perfect for what concerns the irrigation; the egress of the fluid is effected between the two tubes, which are separable like the tongs used for wood fire. But to clean such an instrument, and make it aseptic (except with the flame) is an impossibility. See Fig. 1., especially the shape of the tube ɑ ɒ, two capital D's opposed to each other. No brush could follow the curves and penetrate the angles or curves of the tubes. Moreover, the blind end of the tubes from the openings down to the distal end is a pocket, in which the brush cannot penetrate, a very nice abode for microbes.

Pajot made two sounds; one (Fig. 2) is easy to clean, but, I believe, (having no actual experience of it) that it is difficult to make it work tight. The same inconvenience I met in my Erich. The second (Fig. 3) is too complicated to be possibly kept aseptic; all the time, hinges, screws, nuts, constantly get out of order, and are difficult to keep really clean. It cannot be made of hard rubber, consequently it cannot be kept in a mercurial solution.

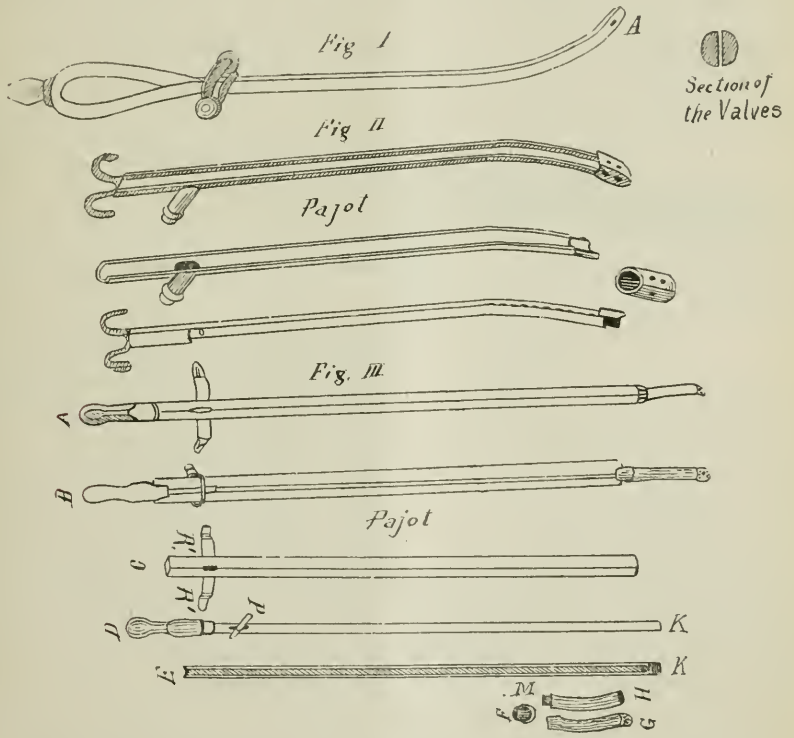
Dr. A. Reverdier, of Geneva, contrived another instrument (Fig. 4) not unlike a pair of scissors. One blade is an open channel, or large groove, for the return of the fluid or débris. The other blade is a tube perforated at the distal end, with holes for the projection of the fluid into the womb. At the proximal end of the tube is fastened a lateral tube for the India rubber tubing or the canula of the syringe. One great improvement would be to have this lateral tube in the axis of the tube, not in the side, so as to make possible the use of the brush inwardly. Another improvement would be to make the distal end movable for the ramrod (or brush) to go all along the tube. Every cul-de-sac is almost impossible to keep clean. This improvement exists in A. Oliver's sound.

A. Oliver's tube is a hollow catheter, where the walls are impressed with four grooves for the

return of the fluid injected. As the diagram shows, the tube presents four angles open internally, which, notwithstanding the use of the brush, may keep some little débris. It is made of hard rubber, and possesses the sigmoid [S] shape of Bozeman's catheter. The distal end is screwed on the instrument, and is movable, thus facilitating the cleaning. But the screws are not easily kept perfectly clean and aseptic. . . . I would suggest the suppression of the stop cock, a favorite place for microbes. The eyelets also may keep some bits of tissue.

My instrument has no rigid tube, no screw, no nuts, no blind end, (or cul-de-sac), no angle, no corners, where the microbes could hide, defeating the brush, and no eyelets. Being open at the distal end, it throws the fluid on the fundus uteri whence it comes down, and returns by the exit channel. I suppose, as is customary with us, the patient lies on her back. It might be made of glass, but I prefer hard rubber as being slightly flexible, and not so easily broken. Then to "give Cæsar what belongs to Cæsar," I am bound to say the idea of two grooves (there could be four, as in Oliver's sound, one for ingress of the fluid, three for the egress, but I prefer two only as being larger, *ceteris paribus*) came to my mind in looking at a "horse-shoe" catheter, originated by my friend Budin of Paris.

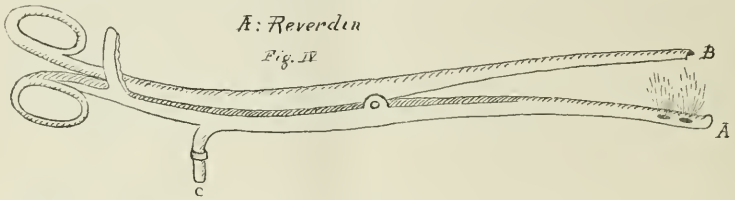
Now a little criticism of my own contrivance. The rubber sheath—which is made to go a little beyond the proximal end of the sound, for admitting the nozzle of the syringe—is the weak point of it. Soft rubber does not wear well. But being very cheap, (12 inches of rubber tubing is not very dear), it can be, if it seems advisable, changed every day, or one can let it stand in a strong solution of an antiseptic fluid, of course, after having taken the hard rubber part out of the soft rubber covering. I would not rely on a



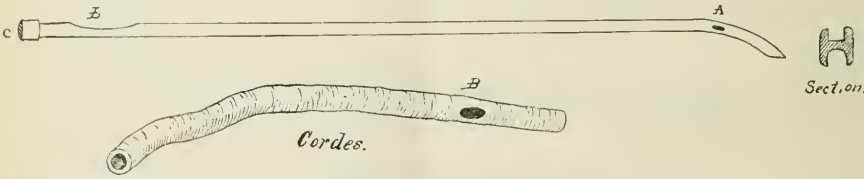
A, instrument ready for use. B, open for dilatation. C, dilator of cervix; two valves united by a double hinge. E, one of the valves. D, internal valve (injector). F, nut, screwing on K on one side, and on M and N on the other side. F is furrowed longitudinally. G H, two grooves held in contact by F. The extremity G is perforated with holes. F turned perpendicularly keeps the valves distended. R' R', levers for separating the valves, kept joined by a spring.

cleaning with the brush, the sound being still in the tube. I will try to improve that. If one says the grooves (being closed channels when the rubber covers them) will get blocked by débris, I will answer, the smaller the débris the more dangerous it is; if it gets in the sound it will be extracted, and I would not be afraid of a slight distension of the uterus which washes it better. Budin's experiments proved that, when the liquid distends the uterus slightly, the washing is more thoroughly made, and will promote contraction in it. Contraction closes the absorbing vessels, keeps the door shut to the infection, and detaches adherent bits of placenta. The whole instrument must be taken out and cleaned by forcing water from one of the ends, which are all open, and in which the nozzle of the syringe can be inserted.

The rubber covering can be as thin as one may wish, and I never experienced any difficulty in passing the sound, properly smeared with vaseline, glycerine, etc., in a uterus admitting a catheter of the same size. My sound slips into the uterus as easily as one of any other material.



B, groove open inwardly. A, tube, water flowing from the eyelets; observe the duration of the flow. C, piece for rubber tubing or syringe.



b, exit of the liquid after irrigation. B, hole in the rubber tube corresponding to b when the instrument is ready for introduction. The eye A may be covered or uncovered by the tube at will. The rubber tube goes up to C, for admitting the syringe.

THE CLINIC.

THE TREATMENT OF FRACTURES BY MEANS OF THE PLASTER OF PARIS DRESSING.

A Clinical Lecture delivered to the Third Year Class at the Medico-Chirurgical College, Philadelphia.

BY D. BENJAMIN, M.D.,

LECTURER ON FRACTURES AND DISLOCATIONS; SURGEON TO COOPER HOSPITAL, ETC.

[Reported for THE JOURNAL.]

Gentlemen:—I have been using plaster of Paris extensively for some twelve years, in the treatment of fractures, and it is undoubtedly the best, as well as the cheapest, dressing for most cases; notwithstanding the apparent simplicity of this dressing, it requires great care in its management in order to secure success.

I have found no dressing so satisfactory as the plaster, or silicate, for the treatment of broken bones in infants. I have recently treated two cases of broken femurs in very young children, aged respectively three weeks and eight months, and after trying various splints and apparatus, resorted to the plaster bandage, which gave great satisfaction; and as I have not known of this dressing having been especially recommended in very young children, I would call especial attention to the efficacy of this treatment.

The plaster bandage should be applied in broken femur from the middle of the foot to the hip, and a spica of the hip carried as high as the navel; care should be taken that the bandage be thick and strong at the bridge which connects the parts which surround the hip with that which encloses the thigh. The leg should be flexed at the knee and at the hip to an angle of about 40° respectively while the bandage is being applied. It is well to continue the ether for fifteen or twenty minutes, while the plaster is setting. I generally use chloroform in children, and the child should be allowed to sleep, as they usually will, without awakening after the chloroform has been withdrawn, naturally and quietly for a considerable time after the influence of the anæsthetic has passed off. The child should lie on its back, with its leg lying on a small pillow. The child will

be comfortable; you will have no more trouble with it; and when you remove the dressing, in seven weeks, the case is well, much better than the long splints that you see depicted in some of the books. The principal difficulties met with in the use of the plaster dressing are: *First*, to get good fresh calcined plaster; *Second*, keeping the rolls in stock without deteriorating; *Third*, preventing the plaster setting to a deformity, should the bones, as they are sometimes prone to do, become displaced while the plaster is getting hard; *Fourth*, getting the bandage off when the fracture is well, or for examination; *Fifth*, the limb getting rapidly too small for the cast; *Sixth*, the time and trouble to get the plaster properly spread on the crinoline and rolled.

I shall now attempt to describe how these difficulties may be best overcome, and will also describe and show you an apparatus which I have devised for the easy preparation of plaster of Paris bandages, as well as the ordinary rolls.

1. The difficulty in getting good calcined plaster is caused principally by the fact that it rapidly absorbs moisture from the atmosphere unless it be very carefully kept excluded from the air. It is best, before buying, to test the sample; good calcined plaster has a smooth, fine feeling when rubbed between the fingers; after it has become partially hydrated by exposure it will be lumpy and feel coarse. A little should be mixed with water and tested as to its setting qualities. Having procured a good article it may be kept for years without deterioration, in air-tight jars. About the best jars for this purpose are large specimen jars, with ground-glass covers.

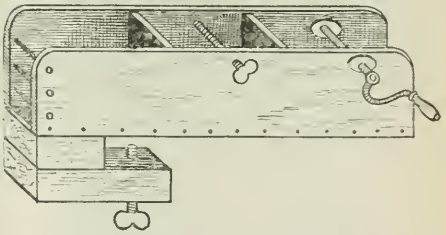
2. Rolls may be kept in stock by keeping them immersed in the jar with the fresh plaster.

3. To prevent the plaster dressing from setting to a deformity when the bones have a tendency to be displaced, a compress may be placed under the flannel bandage, or a piece of binder's board or felt placed over the flannel bandage.

4. By placing a strip of sheet lead an inch and a quarter wide under the plaster bandage, and cutting down upon it before the plaster is quite hard, and then withdrawing the piece of lead by pulling on the end of it, will make it quite easy to spread open and remove the dressing at any time after it has hardened; but it is difficult to cut down through a plaster bandage without causing some disturbance of the relation of the bandage to the limb, or of the bones to each other, and I usually prefer to get along without the use of the lead, and take the more tedious method of cutting through the hardened plaster at the proper time.

5. Cutting through the plaster may be facilitated by applying nitric or hydrochloric acid along the line of the intended incision; but unless neutralized by ammonia it will attack the edge of your steel cutting instruments. To prevent the limb getting rapidly too small for the cast, the plaster of Paris bandages used as splints for broken bones, as a general rule, should not be applied until after the swelling, œdema or effusions, bruisings or enlargements, have to a great extent disappeared, say from a week to ten days after the injury has been received, depending, of course, to some extent upon the amount of the swelling and the rapidity of its disappearance. Previously to the applying of the plaster of Paris dressing, temporary dressings and splints should be applied and proper antiphlogistic treatment instituted to reduce the primary inflammation. At any time after the plaster of Paris has been applied, should the limb—as it often will by atrophy—become too small for the cast, a piece should be cut out of the cast from a half inch to an inch wide through its entire length, and bandages and straps applied around the plaster cast sufficiently tight to draw it up to the limb.

6. To overcome the trouble and time which it takes usually to get the plaster properly rubbed into the crinoline, and rolled by hand, I have devised the instrument which I now show you, and will explain to you the proper method of its use. Any instrument maker, or any student with sufficient mechanical ability or dexterity to be a successful surgeon, can make one.



This machine does not cost more than any ordinary bandage roller, and will roll all ordinary bandages with the greatest ease and facility, and moreover is so constructed as not to be liable to break or get out of order. When you roll a plaster of Paris bandage you give the screw in the side one or two turns back sufficiently to loosen the partition. Having your crinoline bandages cut the proper width, you pass one end under the partition next to the crank, then fill the middle box full of plaster of Paris both under and above the crinoline, first having pressed the partition down to the crinoline tightly, then raising it about the sixteenth of an inch. By the heighth of this partition you regulate the thickness of the plaster on the crinoline. Catch the end of the bandage on the shaft and turn the crank backwards. As the crinoline winds, the plaster is carried along sufficiently thick and sufficiently rubbed in to make an excellent plaster bandage

roller. The roller may be wound tightly by pulling on the distant end of the bandage, or it may be wound loosely by allowing it to flow easily through the plaster. They should not be wound tightly, as it takes too long to soak them afterward, at the time of their application; neither should the plaster of Paris roller bandage be longer than four or five yards, as it would make them too bulky.

You can readily see that the plaster of Paris roller bandages can be made as rapidly, as pleasantly, as cleanly, and as efficiently on this machine as a plain roller bandage.

Having determined to apply a plaster of Paris dressing, you first bathe the limb with alcohol or whisky, rub it with a dry towel, then apply smoothly a flannel bandage first. While doing so have your plaster of Paris rollers steeping, end upwards, in warm water sufficiently deep to cover them, and containing a tablespoonful of table salt to a pint of water. Having squeezed out the surplus water after the entire plaster roller has been permeated, and having carefully ascertained that the broken bones are in their proper position, you apply smoothly and rapidly, occasionally rubbing.

The greatest advantage of the plaster of Paris dressing is that you can get your patient with a broken leg out of bed and out of doors, a very great advantage, one which is of the utmost importance to business men, as it enables them to get to their office, or have an oversight of their business, at least, which sometimes is worth thousands of dollars to them, besides the great improvement of general health.

The dressing can usually be left on six weeks.

MEDICAL PROGRESS.

SALICYLIC ACID IN DIPHTHERIA.—M. D'ESPINE, of Geneva, agrees with Roux and Yersin, of Pasteur's laboratory, regarding the specific character of the bacillus discovered by Loeffler. He believes that the bacillus does not enter the circulation and that it only produces intoxication of the organism by the formation of products which are afterwards absorbed. D'Espine has studied the destructive action of the various parasiticide remedies used in diphtheria as affecting the microörganism. Benzoate of sodium (5 or 10 parts in 100), chlorate of potassium (5 parts in 100), boric acid (4 parts in 100), —— of sulphur (sulphuret of sodium) (from 2½ to 5 parts per 100) left in contact with the bacillus for five minutes has failed to arrest its development. Under similar conditions it has been arrested however, by sublimate (1–8000), by phenic acid (2–100), by salicylic acid (1–2000), by chloral (1–100), by permanganate of potassium (1–2000), etc. These results have induced the reporter to employ salicylic acid in the local treatment of diphtheria, for the reason that it is distinguished among the other remedies experimented upon by reason of its feeble toxic properties. The plan which has given the best results in the hands of the reporter consists in irrigations repeated every hour or two through the mouth or nasal fossæ with a solution of salicylic acid of the strength of 1½ to 2 parts per thousand, which in the case of very young children may be reduced to 1–100 or 1–500. These irrigations may be given by the mouth with an irrigator and by the nose; in the latter case one or two tablespoonfuls of the solution are poured into each nostril after Rigauer's method. One or two litres of the solution may be used during the first twenty-four hours. In older children gargling may take the place of irrigation. When the false membranes are extensive and especially when they are thick, it becomes necessary to apply the solution also with a brush, with a view to softening and breaking them up. For this purpose the author also employs lemon juice, which in his experience has shown a decidedly destructive influence upon the bacillus of Loeffler.—*Gaz. Méd. de L'Algerie.*

CHANGES IN THE CHARACTER OF NASAL MYXOMATA.—At the recent meeting of the International Laryngological Congress, in Paris, M. SCHIFFERS called attention to the transformation of benign into malignant tumors. Such a transformation was long considered doubtful and it is still so in the case of myxomata of the nasal fossæ, properly so called. M. Schiffers presented a series of microscopical preparations obtained from tumors affecting two individuals where the transformation of the myxomata is clearly evident. In one the tumor had become epitheliomatous, in the other it was rather a neoplasm of intermediate nature. One should be on his guard against the possibility of such a transformation when a unilateral nasal obstruction, due to a neoplasm, is obstructed in a subject over fifty years of age. The indication is to operate as soon and as completely as possible with the scalpel or the galvanic knife, and follow the operation with strong antiseptic irrigations to prevent possible autoinfection.—*Le Bulletin Médical.*

ELECTRICITY IN THE TREATMENT OF INTESTINAL OCCLUSION.—HÉRARD reports twenty-four cases of intestinal occlusion treated by electricity. The method consists in first administering a salt solution and then passing a current of electricity. Faradic or galvanic Faradism is indicated in cases of sudden occurrence, galvanism in the cases of slower development. Hérard concludes from his experience that electrical treatment in such cases should always be tried before resorting to laparotomy.—*La Province Méd.*

TREPHINING THE ILIUM.—M. TERRILLON, in *La Semaine Médical*, says that trephining the ilium has long been practiced, Ollier, among others, having advised its employment in a number of cases. The first patient upon whom I performed the operation was a girl of 18, who consulted me on account of a fistula opening near the left anterior superior iliac crest and connecting with a large abscess of the iliac fossa. All methods of treatment hitherto employed had failed. There was an abundant discharge, and the general condition of the patient was bad. An extensive incision above the crest of the ilium enabled me to reach a great cavity situated between the iliac fossa and the thickened peritoneum. The cavity extended as far as the upper part of the true pelvis, and the finger could with difficulty reach its limits. Its walls were covered with thick, reddish fungosities; these were scraped off, and for greater safety a counter opening was made in front of the Fallopian arch. The aspect of affairs at first improved, but gradually the former conditions returned, except that the patient's general health was better than it had been. The difficulty seemed to be like that encountered in empyema,—to make a rigid osseous wall approach a movable one. The following operation was accordingly performed: An incision was made along the crest of the ilium as in the former operation, to enable the operator to explore the cavity and to serve as a guide; an incision 5 or 6 centimetres long was then made above the trochanter, the incision extending backward and going as deep as the bone; the lips of the wound were then turned back above and behind the cotyloid cavity and below the sciatic spine. The periosteum was then carefully removed and the ilium perforated below the superior strait, a finger introduced within the pelvic basin serving as a guide. The cavity was then cleansed and a large drainage tube introduced. Improvement took place rapidly, and the patient was completely cured in four or five months.

In 1888 I had occasion to perform a similar operation upon a man 22 years old, who presented all the symptoms of a psoas abscess with retraction of the thigh upon the pelvic basin. The case was one of several months' standing, and no method of treatment had been successful. An incision was made along the crest of the ilium, by the aid of which I found deep down a portion of denuded bone and a great collection of pus by the side of the psoas. An incision was made and the bone trephined behind the cotyloid cavity; adequate drainage was established and a rapid cure was obtained.

TREATMENT OF ACUTE BLENORRHŒA.—At the outset the abortive treatment with nitrate of silver should be employed. This should be injected by means of a syringe with a backward stream. Care should be taken to constrict the penis to prevent the fluid from being forced too far.

When the discharge is well established one of the following injections should be used:

1.	Lime water	50 grams.
	Distilled water	150 "
2.	Sublimate	3 centigr.
	Distilled water	150 grams.
3.	Salicylate of mercury	6 centigr.
	Bicarb. soda	1 gram.
	Distilled water	150 grams.
4.	Resorcin	3 grams.
	Distilled water	150 "
5.	Creoline	1.5 gram.
	Distilled water	150 "
6.	Pyridine (the most efficacious)	50 centigr.
	Distilled water	150 grams.

These injections should be repeated after each micturition and when possible every two hours. To render them most active they should be given hot (104°).

After the entire disappearance of pain and the subsidence of the discharge the balsamic preparations should be employed:

R.	Freshly powdered cubebs	80 grams.
	Copaiba	50 "
	Essence of peppermint	a few drops.

Dose. A mass as large as a small nutmeg, to be taken in a wafer before meals.

If a cure is not obtained in a fortnight the preparations should be varied, and with a view to render them as efficacious as possible a choice should be made of one of the following formulæ:

1.	Distilled water	150 grams.
	Subnitrate of bismuth	5–10 "
2.	Liquid vaseline	150 grams.
	Salicylate of bismuth	5–10 "
	Sulphate of quinia	1 "
	Gum	10 "
	Glycerine	30 "
	Rose water	120 "
3.	Liquid vaseline	150 grams.
	Salicylate of bismuth	5–10 "
	Resorcin	3 "
	Iodol	1 "

These last injections should be made night and morning.

The two following injections are also useful:

1.	Sulphate of zinc, " " copper, " " iron	20–50 centigr.
	Distilled water	150 grams.
2.	Citric acid	90 centigr.
	Salicylic acid	3 "
	Distilled water	150 grams.

Finally, in those cases where it becomes necessary to apply treatment to the bulbar and retro-bulbar regions which afford a last refuge to the gonococcus, we may resort to various solutions, especially one of nitrate of silver in the proportion of 1 to 50.—L. JULLIEN, *Gaz. Méd. de Liége.*

TREATMENT OF DYSPEPSIA.—There are certain ptomaines which are formed in the stomach

as the result of the fermentation of foods. The therapeutical indication in such cases is to prevent such fermentation and to destroy the toxic substances formed. This may be accomplished by means of water charged with chloroform and antiseptics, and by the preparations of naphthol and salicylate of bismuth according to the formulæ of Bouchard:

R. Naphthol B. 7.5 grams.
Bismuth salicylatis 15 "
For 30 cachets. One cachet after each meal.

R. Naphthol B.
Bismuthi salicylatis.
Magnesiæ. āā 5 grams.
For 20 cachets. One cachet at the commencement of each meal.

R. Bismuthi salicylatis.
Magnesiæ salicylatis
Sodii benzoatis. āā 5 grams.
For 20 cachets. One cachet at the commencement of each meal.

—*Rev. Gér de Thér.*

TREATMENT OF DISPLACEMENTS AND DEVIATIONS OF THE UTERUS BY ALEXANDER'S OPERATION.—PROF. SCHWARTZ, of Paris, reports in detail ten cases of uterine displacement treated by Alexander's operation. The results upon the whole were very satisfactory, and the reporter concludes that the operation is useful in all cases of deviation of the uterus which are reducible or reduced and easy to maintain; also in cases of simple prolapse of the first degree, provided the uterus is easily replaced; it is well in these latter cases to combine also an operation which will narrow the vagina and vulva, especially where laceration has taken place. To obtain good results it is not only necessary that the conditions above mentioned shall be fulfilled, but also that the uterus be not too greatly increased in volume and weight. The Alexander operation is entirely devoid of danger, a fact which especially recommends it in all cases where it is indicated.

When, on the other hand, there is retroversion with adhesion and there is difficulty in the restoring and maintaining the uterus in its proper position, and when, too, there are signs present which indicate disease of the pelvis or the uterine appendages, laparotomy with ventrofixation will be indicated. The same procedure will be indicated in cases of a return of the prolapse after operations on the uterus, vagina, vulva and perineum, such as is observed in cases of hypertrophy with intractable augmentation of volume and weight on the part of the uterus.—*Rev. de Chir.*

A NEW METHOD OF ADMINISTERING COD LIVER OIL.—GUBB, of London, is authority for the statement that the disagreeable taste of cod liver oil may be made to disappear entirely by mixing the oil with extract of malt which has been prepared *in vacuo*. Attention is directed in this connection to a remarkable phenomenon: the aqueous extract of malt placed in contact with cod liver oil dissolves it. This solution is perfectly clear and transparent and shows no fat globules under the microscope. In this manner, strange as it may seem, a true solution is produced. To displace the oil it is only necessary to place a drop of water on the surface, when immediately small drops of oil appear. In this manner the oil which was in solution becomes an emulsion, but this emulsion is more perfect than that of butter in milk. Only extracts of malt which are rich in diastase possess this property. Invalids and especially children enjoy the emulsion, and far from disturbing digestion as the raw oil too often does, the malt improves it.—*L'Union Médicale.*

PYÆMIA AFTER ABORTION.—The etiology of puerperal fever, says V. BABES (*Cent. für Chir.*), has been studied by many authors; the pyogenic streptococci are the ones most frequently found, while now and then a few saprositic bacilli are met with. Babes had opportunity to examine two women who died of pyæmia following abortion, and found in the multiple abscesses phlegmous and thrombi the staphylococcus pyogenes aureus. Supported by these observations he believes that there is an important difference between puerperal infection when the streptococcus are found and infection after abortion when staphylococci are present. The reporter's experience shows that streptococcus infection may occur even in abortion.

ARSENICAL TREATMENT OF LYMPHADENOMA.—An interesting therapeutical question, the treatment of lymphadenoma by means of arsenic, has recently been discussed in the Société de Chirurgie of Paris. In addition to the internal treatment with large doses of arsenic, some prefer to add the interstitial injection of a solution of the drug. The results vary according to the nature of the tumor, the diagnosis of which is not always easy; in the case of benign lymphadenoma they are excellent, but in malignant cases and in tubercular neoplasia they are *nil*. The internal treatment with arsenic, even in doubtful cases, is readily admitted by the majority of surgeons. The interstitial injections in the depth of the tumors excites suppuration, and many prefer the extirpation of the tumors.—*Gaz. Méd. de Paris.*

SOURCES OF INFECTION IN MENINGITIS.—Five forms of bacilli capable of producing meningitis have thus far been identified, viz.: 1. staphylococcus aureus; 2. streptococcus pyogenes; 3. bacillus meningitidis of Neumann and Scheffer; 4. pneumococcus Fränkelii; 5. bacillus meningitidus intracellularis of Weichselbaum and Goldschmidt.—*Correspondenz-Blatt f. Sch. Aerzte.*

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SATURDAY, JANUARY 11, 1890.

THE MICROBE.

The microscopic germ or microbe of to-day, or the old-time entity, has assumed an important rôle in our lives. Of late years a flood of light has been thrown on the subject of germs by the work of M. PASTEUR, his researches in ferments and fermentation, and his extraordinary findings in chicken cholera, charbon and hydrophobia. These have attracted the attention of the medical and lay world, and have been the means of leading to endless investigation in every clime.

To-day, thanks to such researches, upwards of two hundred germs, microbes or bacteria are known, the majority wholly harmless as disease-producers—in a word, most useful in the many physiological processes taking place within our bodies.

While trying to establish the *raison d'etre* of some of these microbes a new one is announced that temporarily promises to be king. The new *bête noire* is influenza, doubtless due to a specific organism wafted through the atmosphere to our circulation. In common with other microbes, "like produces like." This influenza bacillus is an old-time globe trotter. Its antiquity makes it intensely respectable and correspondingly annoying. He hails from the land of the unknown—the East. The Russians attribute it to the Chinese. Certain it is, from St. Petersburg it has spread all over Europe and, instead of continuing a harmless course, seems to have taken on virulence in its travels and now is said to be death-dealing. Doubtless thousands of eyes scientific are watching for the "little stranger."

The conclusion that "like produces like" is an unalterable law in disease and nature. What practitioner would expect a patient with small-pox to cause scarlet fever, or one with the latter to produce puerperal fever in another? What agriculturist planting corn would expect wheat? "Like produces like."

Does vaccine produce scarlet fever or measles? Or has it, through long decades, simply produced the usual effects of vaccination, in all ages and climes? Here a new thought intrudes itself. The result of a successful vaccination is a scab or crust, a scar, and subsequent immunity from small-pox. How many of our readers have paused and attempted to reason out the exact *modus operandi* of vaccine within the system? What does it do in the body? Does the scientist live who in a few happy, well-chosen words can explain that action, or is our reasoning anent it empirical as it is on other equally important questions in disease? What does the cow-pox or humanized vaccine do in our life currents—they that alike distribute nourishment and disease to our tissues, and eliminate effete products? That a successful vaccination exerts a specific influence on the blood, we accept. Do the entities in the vaccinal fluid set up a fermentation within, as evidenced by the often great systemic disturbance, flushed face, rapid pulse and high temperature? Then follows a gradual subsidence of the disturbance, and the irritative effects of the poison pass away. The septicæmia, or whatever you may be pleased to call it, is over, and protection against small-pox becomes an accepted fact. We know that for long years the serum of the vaccine vesicle was not supposed to be particulate; but, thanks to the investigations of DR. LIONEL BEALE, MR. GODLEE and others in England, we now know that it is particulate and full of moving entities. Further, that if vaccine serum be filtered, the fluid that passes through the filter, if used on new-born children, produces no effect, but that if the filtrate be used, the usual characteristic effects follow.

The vast field of bacteriology at present offers some of the grandest problems to faithful workers. Patient investigators should be accorded the largest measure of patience and fair play. The truly vital problems will only reveal themselves to the faithful workers. On our part it must be patience and charity in their crucial and incessant research.

And apropos of inoculations, the press of the country has again referred to the inoculations practiced at Rio de Janeiro, stating that the City Council of that city has been so favorably impressed by their ascertained value as protecting against yellow fever, that $600 a month has been voted for vaccinal establishments. To us, at a distance, it seems that the reasoning of DR. DOMINGOS FREIRE, of Rio de Janeiro, Brazil; DR. L. GIRERD, late of Panama, and DRS. CARLOS FINDLAY and DELGADO, of Havana, is sound and based on the reasoning applied to vaccination. From a case of specific yellow fever blood is taken from the finger and a culture is made. The attenuated culture is used for inoculating. Natural result, a mild yellow fever, or planting corn that they may get corn, to use a homely simile. Dr. L. Girerd, while in that hot-bed of yellow fever, Panama, inoculated himself and produced a mild yellow fever. In December, 1886, the *Canada Medical Record* published a translation of his paper. In Havana, Cuba, Dr. Carlos Findlay repeatedly has inoculated new arrivals, with the happiest results, *i. e.*, subsequent immunity in that hot-bed of yellow fever. Again "like produces like." That the blood of a patient suffering from specific yellow fever must be full of its poison goes without saying. In attenuating it, by cultures made *a la* Pasteur, the gentlemen named have worked on accepted lines. They are well-known writers and investigators, as native and foreign medical literature testifies. They have fixed on certain germs or microbes which, from their constancy in their cultures, they believe to be the specific germ. Many years ago, during a limited epidemic of yellow fever at Southampton, England, DR. HASSELL, of that city, detected an unknown germ or entity in the blood of his patients. ZIEMSSEN refers to it. But be that as it may, from the blood of yellow fever patients the poison of the disease is obtained.

To repeat, time, patience and investigation will clear up the minor details; the great ones seem to be indisputable. That yellow fever is due to an entity or germ all students of yellow fever accept. The year 1890 should show great strides in bacteriology and preventive medicine, and the unfolding of many of nature's secrets. Let scientists work, resting assured that time will do justice to all, and that medical science will place her laurels where they belong.

THE EPIDEMIC.

This disease, so sudden in its appearance, so uniform in its symptomatology, and so early pandemic, is commanding universal attention, and will enlist a critical study on the part of the medical profession at large. In the rapidity of its development and world-wide diffusion as compared with other epidemics, its progress is simply phenomenal. So far as we know it is uninfluenced by temperatures, climates, or seasons. It is regardless of geographical limits, and obeys no known laws of transmission.

With reference to its etiology, we have as yet no positive knowledge; rather, we have everything yet to learn. Bacteriological studies have all had their birth since a like epidemic was known, and until now no such opportunities for study were possible. If its methods of propagation are specific they are essentially different from any others, of contagious or of epidemics, with which we are familiar. It would seem most natural to ascribe such world-wide diffusion of the disease to telluric or atmospheric influences. We are at a loss to account for such rapid diffusion in any other way. It would seem, from the great similarity of the cases reported, that a common cause must be responsible for such effects.

It deeply concerns us to know what light, if any, a carefully conducted series of bacteriological studies may be able to throw upon this field, in which at present darkness seems absolute. Happily, the epidemic does not assume the severity of a pestilence, and thus the people will be saved from panic. Its general prevalence in the United States must be conceded, not in the severer form in which it has prevailed in Europe, but it is equally universal, and has its characteristics equally well defined. In some instances the persons affected suffer severely, in others a slight indisposition only ensues. It differs in some respects from former epidemics of its kind. As a rule, the catarrhal symptoms are notably less severe, so much so as in a large number of cases to be nearly or entirely wanting. The nervous symptoms are much more pronounced. Frequently excruciating pains referred to the head, spine, and lower extremities, constitute the essential features of the disease. In the absence of severe bronchial or pulmonary complications the fatality is much less than that which prevailed during former epidemics of the same disease. As

we might anticipate, patients are prone to suffer severely from nervous exhaustion, but, so far as our observation extends, we fail to note any dangerous or even serious nervous complications.

The remedies that seem best to meet the requirement in this affection are anodynes, antipyretics and tonics. Antipyrin and bromides have proved beneficial, and quinine in tonic doses has appeared to be of special service.

The disease runs its course in a brief period, usually varying from two to four days. In many instances the indisposition hardly confines the patient to his room. In others, the suffering for one or two days is very severe, and decided treatment is indicated. During convalescence patients suffer most from a sense of weakness, and in many instances this sense of prostration is continued for a number of days. It is important that all the essential facts connected with this epidemic be carefully observed, collated and published. If bacteriologists can add to our knowledge as to its pathology, their contributions will be everywhere welcomed.

EDITORIAL NOTES.

HOME.

Dr. Lewis H. Sayre, a son of Dr. Lewis A. Sayre, the well-known surgeon, was found dead on a sofa in the reception parlor of his father's home, at 285 Fifth Ave., New York, on the 3d inst. He had been working very hard at his professional labors recently, and he went home worn out, and threw himself on the sofa and fell asleep. A servant was the first to discover his death. He had been troubled with heart weakness for some time, and his sudden death was attributed to heart failure. He was 38 years old, and had a lucrative practice. Some years ago he married Miss Alice Pomeroy, the daughter of a wealthy dry goods merchant of New York. His widow and three children survive him. Dr. Sayre was graduated from Bellevue Hospital Medical College in 1876. He was a member of the New York County Medical Society, the American Medical Association, the Pathological Society and the Neurological Society.

Death of Dr. Walter K. Boylan.—The cable announced last week the death, in Berlin, Germany, of Dr. Walter K. Boylan, of Cincinnati, on December 26, last. Dr. Boylan was a young physician of promise and prominence in the profession of his city. Graduating from the Medical College of Ohio in 1883, he was at once elected Professor of Materia Medica in the Cincinnati College of Medicine and Surgery, a position which he held until the election of a new faculty a few years later. At the time of his death he was pursuing studies in Europe.

Another Medical Library Project.—A nucleus for another medical library and *rendezvous* in New York has just been brought into possibility by the junction of the Mott Memorial Library and the State Medical Association. They have 5,000 volumes and 8,000 respectively and most eligible headquarters at 64 Madison Avenue. They have a small fund each, and the opportunities for a steady increase in a membership of 700 physicians in the State Association. Many a useful institution has had its beginnings in a more meagre foundation than is presented by the above combination.

The Hospital Sunday Fund in New York City.—The present indications are that large contributions have been made to the annual Hospital Fund. The amount obtained in 1888 was $52,139, an amount which will be equalled, at least, this season. The collection in one church amounted to a little over $8,000.

The Southern California Medical Society will hold its fifth semi-annual meeting at Santa Barbara in June.

The Ohio Board of Pharmacy will hold meetings for the examination of persons desiring to register during 1890, as follows: Cincinnati, Monday, Jan. 13; Columbus, Tuesday, March 25 and Monday, May 12; Toledo, Tuesday, July 22; and Cleveland, Monday, Oct. 13.

New York Academy of Medicine.—Mrs. Eliza C. Farnham has given $10,000 to the library fund in memory of her deceased husband, Dr. Horace P. Farnham.

A Courageous Ambulance Surgeon.—*The Medical News* says that Ambulance Surgeon Mead, of St. Mary's Hospital, Brooklyn, was called to an elevated road accident, and found that the mangled, yet conscious patient had fallen and been caught under a locomotive. The surgeon administered a hypodermic to the injured

man before the latter had been disentangled from the track, and while the two, surgeon and patient, were lying beneath the fire-box of the engine.

THE KANSAS MEDICAL CATALOGUE is the title of a new medical journal published at Fort Scott, Kan., and edited by Drs. F. F. Dickman, J. B. Carver and J. M. Poindexter.

THE STATE MEDICAL SOCIETY OF KANSAS will hold its next annual meeting at Salina, on Tuesday, May 13.

THE FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its twenty-first anniversary meeting in New York City on the 14th, 15th and 16th inst.

DR. JOHN S. MARSHALL, of Chicago, has been appointed Secretary of the National Association of Dental Faculties. The late Secretary, Dr. Junius E. Cravens, resigned in consequence of having taken up his residence in Paris, France.

THE POLYCLINIC MEDICAL SOCIETY gives, under its auspices, a lecture, or holds a meeting of its Therapeutical Section, every Tuesday evening at 8 o'clock, at the College Building, N. W. corner of Broad and Lombard streets, Philadelphia, during the season. The whole course is free to members of the profession and to medical students. The following lectures and meetings are announced for 1890:

January 7, Dr. Alexander MacCoy, "The Clinical Features of Tuberculosis of the Larynx."

January 14, Dr. B. F. Baer, "Abdominal Surgery."

January 21, Dr. Thomas G. Morton, "Modern Treatment of Club-foot."

January 28, Meeting of the Therapeutical Section.

February 4, Dr. Edward P. Davis, "Use of the Obstetric Forceps."

February 11, Dr. John B. Roberts, "The Anatomy of Facial Expression."

February 18, Dr. J. Henry C. Simes, "Prostatorrhœa."

February 25, Meeting of the Therapeutical Section.

March 4, Dr. R. W. Seiss, "Inflammation of the Eustachian Tube."

FOREIGN.

CHOLERA AND ITS PILGRIMAGES.—*The Indian Medical Gazette* says that some months after the outbreak of cholera at the Pearl Fisheries of Ceylon, there has been a fresh outbreak of cholera on the island, brought about by a Roman Catholic pilgrimage to St. Annas, at Palleecudava. This pilgrimage seems to have been attended by people from all parts of the island, including the Northern Province and Southern India, where cholera was known to be present. The history of the outbreak is similar to those which occur so frequently in India. Immediately the pilgrims reached St. Annas' deaths from cholera began. A panic ensued. The Roman Catholic Bishop broke up the festival; the crowd was dispersed and carried cholera with them wherever they went.

THE SECOND CONGRESS FOR TUBERCULOSIS will be held in Paris during the latter part of July. Prof. Villemin will act as President. The following questions are to be discussed: 1. The Identity of Human and Bovine Tuberculosis; also that of Other Animals; 2. The Bacteriological and Morbid Associations of Tuberculosis; 3. The Isolation of Tuberculous Subjects; 4. The Agents Capable of Destroying Koch's Tubercle Bacillus, With a View to the Prophylaxis and Therapeusis of the Disease in Man.

A HELPFUL ASSOCIATION IN VIENNA.—The *British Medical Journal*, December 21, 1889, states that the Governor of Lower Austria has sanctioned the formation of the American Medical Association of Vienna, whose object is the taking in hand of British and American medical men immediately on their arrival at the University. The Association, made up of physicians for the most part, arranges that each student shall have a committeeman, to look to for information, who is interested in the same line of study. The Rev. Francis Gordon has been chosen to act as Secretary and Treasurer of the Association and may be addressed at 12, Landesgerichts strasse. The entrance fee is one gulden, and membership may be enjoyed by any English-speaking physician or medical student. The Association will be helpful in showing to strangers how they can avoid extortionate charges and otherwise economize. According to its estimates an economical student can live on $30 to $40 per month. In addition to the lectures regularly scheduled in the *Calendar*, by the professors, there are the lectures by the assistants, new courses of which are being developed all the year round, new talent being discovered and forced to the front every session.

TOPICS OF THE WEEK.

THE APPROACHING REVISION OF THE PHARMACOPŒIA.

"Eile mit weile."

Progress in pharmacy is progress in medicine, and all physicians should be inspired by a desire to improve, in every possible way, the Pharmacopœia, which represents the accumulated experience of ages in the science and art of pharmacy, and constitutes the most reliable guide to pharmacists and physicians who would acquaint themselves thoroughly with medicinal principles and their effectual combination in eligible pharmaceutical preparations. The value of any addition to the Pharmacopœia suggested by pharmacists should, therefore, receive the earnest consideration of physicians, and the medical profession should be able to furnish from their clinical experience many important and vital suggestions to the committee who are entrusted with the important duties of revision. This committee, indeed, invites criticism from all well-informed sources, and has widely distributed a Digest of Criticisms of the present Pharmacopœia for the purpose of the freest and fullest discussion by all concerned. It is in this spirit that the following criticisms are submitted.

As the generally accepted standard of strength and quality for medicinal preparations, the United States Pharmacopœia should be most carefully compiled and removed as far as possible from all merceuary influences. One interest which is liable to influence the publication of the next Pharmacopœa disadvantageously, unless such influence is properly controlled and judiciously acted upon, is the manufacturing pharmaceutical interest.

Owing to its wide-spread circulation, its general acceptance as a standard, the Pharmacopœia must exert a very powerful influence both with physicians and druggists in the direction of inducing a larger consumption of pharmaceutical preparations. Thus, houses who own copyrighted, trade-marked, or patented preparations would be willing to pay large sums to induce the Pharmacopœia to recognize the same. The adoption of a new standard of pharmaceutical preparations to substitute existing standards of the present day could be used to great and profitable advantage by the manufacturers if they controlled, by copyright, or trade-mark, or patent, the name of the line of pharmaceutical preparations, or the line itself. What a profitable thing for the originator, for instance, would be the recognition by the Pharmacopœia of the line of pharmaceutical preparations known as specific medicines, specific tinctures, or green root tinctures, as a substitute for the fluid extracts which have been so long in vogue. Shall antipyrin, antifebrin, sulphonal, chloralamid, and many other specialties of foreign manufacturers, who are flooding the country with remedies protected by patented processes or fancy trade-marked names, so as to secure to their possessors a permanent monopoly at any outrageous price they may wish to arbitrarily fix, be admitted to the Pharmacopœia? Are such remedies and their literature to usurp a place in scientific literature, to the disgrace of the legitimate interests of pharmacy, the aggrandizement of foreign capital, and the destruction of pharmaceutical nomenclature?

We do not wish to be misunderstood in this matter. We do not wish to reflect on the therapeutic utility of such preparations, but merely to make thoroughly apparent the caution and care necessary to consider the true character and tendencies of the many products advanced for Pharmacopœial endorsement.

It is not necessary to amplify on these points. The tendencies of these defilers of the Pharmacopœial temple are too well known to ever receive the recognition they covet.

There are, indeed, many actual and much needed improvements required in this temple of pharmacy, if we may continue our simile, which have none of the disadvantages, to say the least, of this rapidly growing progeny of foreign invaders. Let the committee address their attention to these. To what standards of excellence do our average manufacturers of medicine live up to at the present time? Are these standards the highest and best known to pharmaceutical science? Not at all, and we shall take occasion, in further comments on this important subject, to mention some improvements in pharmaceutical processes, the claims of which are eminently more worthy of consideration by the Committee of Revision. It will be readily seen that manufacturers of pharmaceutical preparations generally could well afford to bring to bear great influence upon the projectors and controllers of the Pharmacopœia, if they had the slightest hope of inducing the committee to act upon their suggestions.

It is, therefore, essential that the committee in charge of the Pharmacopœia should be actuated solely by a regard for scientific and humanitarian interests. They should be men not only honest in purpose, but they should also be sufficiently competent by experience to judge as to the merits of each individual presentation. They should be free from all bias and prejudice. *Eile mit weile.* To make haste slowly should be their guiding rule.—*Medical Age.*

EXECUTION BY ELECTRICITY IN NEW YORK.

The following is an extract from a decision in the Supreme Court of New York, rendered December 30, 1889, regarding the alleged unconstitutionality of the law providing for the electrical execution of criminals. The motion of the opponents to the new law is denied by this decision, which is written by Judge Dwight, and which denies the contention of those opponents that the law prescribes "a cruel and unusual punishment."

"It detracts nothing from the force of the evidence in favor of this conclusion that we do not know the nature of electricity nor how it is transmitted in currents, nor how it operates to destroy the life of animals and men exposed to its force. Neither do we know the nature of the attraction of gravitation, which is the operative force employed in the infliction of death by hanging, nor how that force operates to draw towards each other masses of matter freely moving in space. We know these and all other forces of nature by their effects, and we avail our-

selves of them in the daily processes and pursuits of life with a confidence based upon common experience, without inquiry as to the essence of the force or the mode of its operation.

"The experiments with electricity as a death-dealing agency disclosed by the evidence were necessarily confined to the lower animals, but unfortunately the experience of mankind in this respect has not been confined to experiments purposely made. Death by strokes of lightning has been known to the world in all ages, and the frequency and publicity of death by accidental contact with electric wires during the last few years, and especially the last few months, have made the deadly power of the electric current shockingly familiar wherever the newspaper is read.

"In most casualties of this sort, the exposure being wholly accidental, the contact is imperfect, the resistance unregulated and the force of the current accidentally deflected through the body of the subject, only a fraction of that being transmitted through the wires. Accordingly, in some cases the victim of the accident has escaped with his life, and in some cases death has been accompanied with burnings and contortions. But in all such cases the effects mentioned have evidently been due to lack of force in the current received or to the imperfect manner of its application to the body of the victim, and the general result of these demonstrations in the light of the scientific evidence in this case is, as we think, to remove every reasonable doubt that the passage of a current of electricity of a certain well-determined intensity through the vital parts of the human body under chosen conditions of contact and resistance must result in instant death.

"If the question here were of the wisdom and advisability of the proposed change in the mode of inflicting the death penalty the discussion might be prolonged. As we are confined to the question of the constitutionality of the statute which introduces the change, we deem further discussion unnecessary for the presentation of our views."

The question has now been passed upon by all the courts save one, the Court of Appeals, before whom it will be brought early in the current term.

A MUSEUM OF SOCIAL ECONOMY.

It is officially announced that the Cross of the Legion of Honor, with the grade of Chevalier, has been conferred on Mr. Ernest Hart, in recognition of his services to France, especially as President of the Social Science Committee in the recent International Exhibition. It is hoped that suitable recognition will also be made of the services of Dr. Louis Parkes, who acted as the very efficient Honorary Secretary in organizing this Section, which has proved so interesting that the French Government has determined to establish a permanent Museum of Social Economy, which of course includes hygiene, education, public sanitation, and other cognate subjects. M. Léon Say, the eminent President for France of the Section, has appealed to English exhibitors to allow as many of their exhibits as possible to remain in the permanent museum. It is hoped that a large proportion of the exhibitors will comply with this request, if not in form, in substance, by leaving their exhibits or by forwarding equivalent models and books.—*Brit. Med. Jour.*

PRACTICAL NOTES.

THE CARRIAGE OF INFECTION BY PHYSICIANS.

With reference to the communication of contagious diseases by physicians, a question that is now being agitated in England, a correspondent of the *British Medical Journal* writes that "although it cannot be denied that it is possible for a medical man under some circumstances to convey infection from one patient to another, the risk of this taking place is, if ordinary precautions be taken, almost *nil*. This is clearly shown by the experience at the London Fever Hospital, where the resident medical officer in the discharge of his duties is constantly passing from the scarlatina department to the departments for measles, typhoid, diphtheria, etc., and yet it has never been found that he transfers these contagia, although he would be much more likely to do so than an ordinary practitioner, inasmuch as the poison is necessarily more concentrated in a fever ward than in a room where only one patient is treated. The medical attendant is not, as a rule, brought into sufficiently close and prolonged connection with his patient for his clothes to receive any very large amount of the contagion, and a short exposure to the open air is generally sufficient to disinfect him. Nurses, no doubt, whose clothes from prolonged and constant contact with the patient become saturated with the poison, may readily convey infection. The only precautions taken by the physicians to the fever hospital—and a long experience has shown them to be quite sufficient—are to wear a special outer garment and cap in the wards, but even this is not done by the resident medical officer.

"For all ordinary purposes washing the hands in a disinfecting solution and a short exposure to the fresh air will, I am sure, sufficiently disinfect the practitioner, though it is advisable that he should change his coat, and he ought, as far as possible, visit his infectious cases last.

"In the case of smallpox, however, where the poison is present in a liquid form, and may possibly get smeared on the clothes, a change of clothes is necessary."—*Medical News.*

THE SIGNIFICANCE OF ERYTHEMA.

Erythema multiform is more and more growing in importance as a symptom or precursor of not a few grave diseases. It does not do for us now to regard an attack of it as simply due to indigestion. It has been shown that the occurrence of erythema may mark the beginning of typhoid fever, may occur as one of the symptoms of acute or chronic malarial disease, may be a manifestation of a rheumatic or lithæmic state, or may even, as it were, be an abortive manifestation of any of these diseases. Our attention is

again drawn to the fact by Dr. Moncorvo, of Rio de Janeiro, who, in a recent number of the *Revue mensuelle des maladies de l'Enfance*, reports two cases of erythema nodosum occurring in the course of acute malarial disease and yielding promptly to quinine.—*N. Y. Med. Journal.*

THE TREATMENT OF ACUTE CATARRH OF THE RECTUM.

Quite frequently the practitioner of medicine sees cases in which the entire list of remedies generally found of value in the treatment of diarrhœa have proved useless, or merely palliative in effect. While they may control the frequent movements of the bowels for a time, the trouble reasserts itself as soon as the medicine is withdrawn, at the best in a somewhat modified form. Careful inquiry will show, in such cases, several points of value as to diagnosis and treatment. The attack has probably been preceded by a few days during which there has been a sensation of weight and fulness in the rectum and about the anus; following this, a sensation of bearing down asserts itself, accompanied by violent pain referred to the region of the stomach, or small gut. So severe is the pain in its paroxysms that the patient may cry out with it and the perspiration break out over the body. At first small passages may occur, but after a few stools they consist of wind and a few drops of mucus, which is expelled after a period of agonizing pain and tenesmus. Opium makes the state ultimately far worse than before, and nearly all astringents are valueless. Under these circumstances small doses of chlorate of potash injected into the rectum are most serviceable, only one or two injections being necessary in some acute cases to produce a cure. A saturated solution of the potash in water should be employed and about half a tumblerful injected each time, very slowly and without force, and retained for ten or fifteen minutes. Large injections will cause pain and expulsion of the liquid, and no result will be attained.—*Medical News.*

SOMNAL, A NEW HYPNOTIC.

Radlauer, of Berlin, has introduced a new combination to which he has given the name "somnal." This substance is composed of chloral, alcohol and urethane, and is said to be a true chemical compound, and not merely a mixture. It is, therefore, different from the "chloralurethane" which has been used, for a year or more, by alienists and nerve specialists, and which has been considered by some of them both safe and reliable. The *British Medical Journal* says that somnal occurs in clear, colorless crystals, having a slightly bitter taste and being readily soluble in water and in alcohol. It is given in doses of thirty grains, and sleep is produced in thirty minutes. The sleep is described as sound and natural, lasting from six to eight hours, and followed by no unpleasant effects. Somnal does not disturb the digestion, has no influence over the pulse or temperature, and, in fact, has the excellent qualities of both chloral and urethane without their disadvantages. Favorable experience with the drug is said to have been reported from the hospitals of Berlin and Moscow.—*N. Y. Med. Journal.*

PULMONARY HÆMOPTYSIS.

M. Vidal recommends treating pulmonary hæmoptysis in phthisical patients with ipecacuanha and antimony, or kermes (oxydum stibii sulphuratum rubrum), in small doses every ten minutes. If this does not completely arrest the hæmoptysis, M. Vidal counsels applying Gounod's cupping glasses or ligating a limb. When fever is present, two grams of ergot of rye and one gram of sulphate of quinine divided in four doses, to be taken every three hours, M. Vidal has found successful, but condemns the use of iron or arsenic, generally considered good in treating hæmorrhage.

CATARRH SNUFFS.

For scrofulous rhinitis:

℞	Sulphophenate of zinc	20 centigrams.
	Salicylate of bismuth	4 grams.
	Iodol	3 grams.
	Tannate of zinc	2 grams.
	Pulverized tobacco	10 grams.

For chronic catarrhal rhinitis:

℞	Pulverized alum	2 grams.
	Borax	2 grams.
	Menthol	20 centigrams.
	Tannate of zinc	3 grams.
	Tannate of bismuth	3 grams.
	Locopodium	8 grams.

—*Journ. de Méd. de Paris.*

TREATMENT OF PROFUSE MENSTRUATION.

℞	Dialyzed ergotine	40 grams.
	Distilled water	70 grams.
	Glycerine	20 grams.
	Salicylic acid	20 centigrams.

T. One teaspoonful diluted with three teaspoonfuls of water to be injected in the rectum once a day after stool.—Reinstadter, *Gaz. Méd. de Liége.*

URAL, A NEW HYPNOTIC.

This body, obtained by dissolving urethane in chloral, presents itself in form of crystals soluble in alcohol; little soluble in water, which volatilizes without decomposing, and is fusible at 106°. It imparts a bitter taste. It does not modify the blood pressure, and its administration is never followed by accidents. It is prescribed with success in cardiac affections, mental maladies, hysteria, etc.—*La France Médicale.*

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, June 12, 1889.

DR. CHARLES E. HAGNER, PRESIDENT, IN THE CHAIR.

DR. P. J. MURPHY reported a case of

CANCER OF PREGNANT UTERUS AT TERM.

Cecilia H., æt. 34, colored, entered Columbia Hospital for Women and Lying-in Asylum, May 24, 1889. She was born in Virginia, resident of the District of Columbia for the last fifteen years; married; puberty unknown; miscarriage or abortion, none; about four years ago gave birth, after a natural labor, to a living child, which she nursed; last menstruation some time in September, 1888; time of quickening, unknown; had some morning sickness and no headache during the present pregnancy. On physical examination the abdomen was found very much enlarged; fundus uteri extending two inches above umbilicus; fœtal heart not heard; external genitals normal; cervix uteri one-half inch in length admitting tip of finger; slight œdema of the lower extremities. Urine dark amber color, acid reaction, sp. gr. 1030, no albumen. Bowels regular while in the hospital.

June 7, 9.30 A.M. Patient complained of a feeling of nausea and of pains in the back and sides; was put to bed, the nausea soon ceased, and as the pains became very slight she was left resting quietly on the bed. At 11 A.M. she had another attack of nausea and vomited about a half pint of greenish-yellow (bilious) fluid. Ordered mustard plaster over the epigastrium. At this time there was a slight flow of pale yellow fluid from the vagina, and on examination the woman was found to be in the second stage of labor, the vertex having descended more than half way through the parturient canal, the occiput rotating towards the symphisis pubis from an L. O. A. position. The nausea soon ceased and at 11.30 A.M. the occiput began to protrude through the vulva, and after a few apparently natural pains the head was delivered, and during the next pain, which followed after an interval of about a minute, a still-born female infant was expelled, followed immediately by a gush of bloody fluid (about three pints), accompanied by the placenta and fœtal membranes. The uterus, after the expulsion of the after-birth, became hard and firm, but irregular in form (nodulated), and extended nearly to the umbilicus.

Two drachms of the fl. ext. of ergot were administered internally, and as the patient now for the first time began to show decided symptoms of exhaustion (other than what might be attributed to the nausea) one drachm of the fl. ext. of ergot was administered hypodermically. The pulse was observed to quickly become very rapid and feeble, the countenance pale, and the surface of the body cold. She was kept lying still, her head lowered, the foot of the bed elevated; two drachms of whisky were given by the mouth, but she could not swallow it, and one drachm was administered hypodermically; hot-water bags were placed around the body, and the lower extremities bandaged with towels from the feet upwards. The patient, whose pulse had been scarcely perceptible, became somewhat aroused, but gradually passed into a state of low muttering delirium. She remained in this condition one hour and forty-five minutes, though repeated hypodermic injections of whisky, supplemented by tincture of digitalis, had been administered, the pulse during the whole time being very feeble. At 1,30 P.M. she raised her head and made several spasmodic efforts to turn from one side to the other, and then fell back upon the bed; her heart ceased to pulsate, and after ten or twelve spasmodic efforts to catch her breath, respiration ceased.

Throughout the post-partum period the uterus remained in the condition it had assumed at the expulsion of the after-birth. There was very little, if any, post-partum hæmorrhage from the uterus. An examination of the after-birth showed that it had been expelled entire. Throughout its substance there were interspersed numerous caseous masses, varying in size from a pea to a cherry. They were roughly estimated to compose one-tenth the mass of the placenta. During the vaginal examination, fifteen minutes before delivery, there was no perceptible hæmorrhage, the index finger on being withdrawn was tinged with a pale yellowish fluid, a small amount of which had just previously been expelled.

Child, female, weight 5 lbs. 12 ozs.; placenta, weight 1 lb.

The post-mortem was made fifteen hours after death by Dr. William P. Carr. Body fairly well nourished; rigor-mortis; abdominal walls thin and flabby, showing outline of the uterus, which can be distinctly felt as a firm, elastic, nodulated tumor, extending a little above the umbilicus. On opening the abdominal cavity it is found filled with a half gallon of bloody fluid. The uterus extending above the umbilicus is mottled with slate color, white, dark purple, and bright red spots, and is studded with firm white and bloody nodules, varying in size from a pin head to a walnut. It has a raw appearance in places, as if denuded of epithelium, and blood is oozing from nearly the whole peritoneal surface. Upon removing the uterus its walls are found to be about two inches thick, composed mainly of firm fibrous nodules, while the proper muscular structure of the organ is dark red, nearly black in places, infiltrated with blood which oozes from

its uncut surface. The surface is so soft and mushy as to resemble a blood-clot. Evidently more than a quart of blood had oozed from the peritoneal surface of the uterus into the peritoneal cavity. The ovaries are atrophied and not more than one-fifth of an inch thick. Right tube was swollen to the size of the thumb, infiltrated with serum, and of the consistency of jelly. Left tube normal size, but dark red color. Broad ligaments and all the pelvic tissues infiltrated with serum. Lymphatic glands, near the sacrum and lumbar vertebræ, as large as almonds, and of a dark red color, some nearly black. Kidneys have some fatty striæ in the pyramids. Thoracic cavity: Lungs gray, abundantly mottled with black pigment. Pericardium contains half pint of greenish-yellow serum. Heart covered with yellow fat, and one-third larger than normal. Both ventricles flabby and dilated. Both auriculo-ventricular openings so dilated that the valves are insufficient. Wall of the left ventricle apparently normal. Wall of the right ventricle of a uniform yellow color, presenting no appearance of muscular tissue and composed apparently of fat, is only one-fourth inch thick.

The cause of death was from the loss of blood from the diseased uterus, both from its cavity and from its peritoneal surface, a much smaller amount of hæmorrhage sufficing to cause death than if the heart had been normal.

Dr. J. F. Thompson said that, looking at the specimen, it seemed as if the bleeding from the outer surface of the uterus was caused by the breaking up of adhesions, due to uterine contractions during labor. There was one spot especially that looked as if adhesions had given way. It was difficult to explain this hæmorrhage unless it was upon this theory.

To a question by Dr. Hamilton:

Dr. Murphy replied that there had been no traumatism during pregnancy, nor had there been hæmorrhage of an unusual character during labor.

Dr. Hamilton thought that adhesions between the diseased organ and neighboring parts, and their separation, accounted for the hæmorrhage. It was well known that after injuries to the mesentery the vessels would bleed freely upon contraction of the bowels. In his case of wound of the mesentery and bowels a very free hæmorrhage supervened from a small abrasion, forming a large hæmatoma. If this could occur from a small point, we could readily see how the breaking up of adhesions over so large a surface would lead to a profuse and fatal hæmorrhage.

Dr. Murphy, in closing, said he would defer further remarks until after the microscopic examination of the specimen. He took the tumor to be malignant. His first idea of the cause of the hæmorrhage had been that it was due to pressure upon the dense fibrous, non-yielding tissue of the uterus by the contraction of the abdominal muscles. But he now thought that Dr. Thompson's suggestion afforded a clue; that, in fact, it explained the hæmorrhage to his satisfaction; he therefore accepted it as correct.

Dr. John B. Hamilton reported a case of

DOUBLE CRYPTORCHIS.

The patient, aged 49, was referred to him through the kindness of Dr. Johnson. Dr. Hamilton found a swelling in the left groin in the inguinal canal, while a smaller swelling, about the size of a filbert, occupied the right groin. The former was about the size of a hen's egg. The scrotum was empty, hence it was a case of double cryptorchis, a name properly applied, even if the testicle was located in the canal. Cases of monorchis were comparatively common, but a double cryptorchis was rare. There was in this case severe and constant pain in the left swelling, which had undergone sarcomatous degeneration. The operation for its removal was by a simple incision over the canal, enucleation of the diseased organ, and ligature of the cord by catgut, after which the stump was dropped back and the pillars closed by sutures so as to prevent hernia. The other testicle was not enlarged, but in the canal, and as it was not painful and gave no trouble, it was left alone. It would in time, probably, undergo the same degeneration. He had desired to bring it down into the scrotum, and on grasping it could almost get it into place, but the cord was stretched so greatly that he feared atrophy or rupture of the vessels would result, hence he preferred not to put it to the test. He would, on a future occasion, present a full paper on the entire subject, but at present simply desired the reference of the specimen to the Committee on Microscopy.

Obstetrical Society of Philadelphia.

Stated Meeting, Thursday, October 3, 1889.

Dr. Theophilus Parvin in the Chair.

Dr. E. P. Bernardy reported a case of

SUPPURATING POST-PUERPERAL HÆMATOCELE. OPERATION, CURE.

Mrs. McM., æt. 38, sixth pregnancy. Fell in labor April 19, 1889, about 8 o'clock in the evening; head presentation, right occipito-posterior position; delivered about midnight of same evening of a large living male child. Labor seemed normal, but somewhat tedious in regard to her former labors, no doubt caused by the position of the head, which gradually rotated to an anterior occipito. There was a constant aching feeling between the pains, not that absence of pain generally expected in natural labor pains; as the pa-

tient remarked, it felt like a bad toothache. Third stage normal, placenta came away within twenty minutes, uterus contracted rapidly and firmly. Shortly after the termination of labor, the muscles of the calf of the left leg became painfully cramped, lasting nearly an hour; hot applications and rubbing seemed to relieve the patient. Pulse about 80, but weak.

About 6 o'clock in the morning, the husband called at my office and stated that about 4 o'clock his wife had been taken with a sudden sharp pain under the right breast, which prevented her breathing freely. Ordered teaspoonful of liq. morphiæ sulph. every half hour, and warm applications to the side. Saw her shortly afterwards; pulse 120, temperature 101°. Sharp, agonizing pain below right breast; impossible to take a full breath. Auscultation negative, no pain over the abdomen, strong pressure being made over its entire surface.

April 23, pain under breast relieved. Sense of fulness of the abdomen, constipation, cannot pass her urine, urine drawn off by catheter; 1 drachm Rochelle salt every hour until free purgation took place. Next day, pulse quick and irritable, temp. 103°, tongue dry, still unable to pass her urine, bowels open freely; complains of a sense of fulness in the rectum. Examination by the rectum shows a tumor about the size of an egg pressing in its walls; vaginal examination reveals a tumor behind and to the left of the uterus. Ordered hot vaginal injections of $\frac{1}{10\,0\,0}$ bin. iod. mercury, poultices over abdomen. There being no positive pain, only a feeling of fulness, no opium was given. From this time up to the day of operation (May 5, 1889) the temperature varied from 102° to 104°; under large doses of sulphate of quinine it would drop.

April 27, 1889, examination by rectum and vagina shows the tumor increasing rapidly; it is now the size of a large orange, and very sensitive to the touch.

May 1. The tumor now fills the entire rectal cavity, pushing down to almost the external sphincter. The entire left side of the pelvis is completely filled by the tumor, pushing the enlarged uterus, which is movable, well to the right side, making it appear as if there were another tumor. Advised operation.

May 3, case seen by Dr. Joseph Price; same condition as on May 1. Patient hectic toward the afternoon; face has assumed a peculiar yellowish appearance, eyeballs yellow.

May 5, operation. Present, Drs. Joseph Price, M. Price, Solis-Cohen. Operator, Dr. Eugene P. Bernardy. The usual median abdominal incision was made. On introduction of the finger in the abdomen, the entire left side of the pelvis behind the uterus and broad ligament was found filled by a tumor, surrounded by adhesions; slight adhesions to the intestines, which were readily separated before enucleating the left side tumor. In passing the finger behind the right side of the uterus, the finger ruptured some slight adhesions, entering a cavity from which freely flowed thick black blood, looking and smelling like blood contained in an extra-uterine sac. After enucleating the left side tumor it left an immense cavity which was, as well as the abdominal cavity, well douched with hot water. Both ovaries and tubes were healthy, and were not touched. Glass drainage tube introduced, and abdomen closed.

On the day of the operation the pulse was 120, temp. 102°. The day following, pulse 96, temp. 101°. Third day after operation, temperature and pulse normal. On the sixth day, glass drainage tube changed to rubber tube. Three days later, tube taken out; stitches taken out the sixth day, union except where drainage is placed. May 23, 1889, entire cut healed, and patient discharged during the first week in June.

DR. J. PRICE: I saw this patient with Dr. Bernardy and Dr. Cohen; and to have a purely medical man urge the importance of abdominal section in a post-puerperal case is very encouraging. There was a considerable quantity of broken-down blood, which was washed out with difficulty. If the case had not been a post-puerperal one, the history would have been that of an extra-uterine fœtation. This case demonstrates most forcibly the fallacy of claims made in regard to refinements in diagnosis, and shows the folly of claiming a positive diagnosis.

DR. H. H. KYNETT: I report the first two cases because they present some important features for consideration in the

TREATMENT OF PELVIC TROUBLES.

The specimens of the first case I am not able to show to-night, owing to the lapse of time since removal.

Case 1.—L. P., colored, æt. 30, married seven years, and never pregnant; complaining more or less ever since marriage. Abdominal section April 2, 1889. Removal of both appendages for double pyosalpinx and double ovarian abscesses; release of adhesions, irrigation, and drainage. When the peritoneal cavity was opened, there was a free discharge of muddy, blood-stained fluid, indicating a marked peritonitis. Investigation showed this fluid was contained in a sac formed by inflammatory processes, shutting off the pelvic portion from the general peritoneal cavity. The adhesions, however, were friable and easily broken. Contained in this pelvic abscess cavity were four distinct pus sacs, viz.: two huge pus tubes and two ovarian abscesses, the larger the size of an orange. The removal of these sacs was not difficult; the patient recovered promptly, and is now in better health and spirits than since marriage.

Points worthy of notice in this case are:

1. Four distinct abscess cavities within a fifth.

Query, what would have been the result of Martin's treatment of pelvic abscess by vaginal drainage?

2. In spite of careful manipulation, both ovarian abscesses were ruptured in removal, and the walls of the containing sac were very easily broken up. Query, what might electricity, properly applied, have accomplished?

3. When first seen, the patient did not complain of symptoms of acute trouble at all commensurate with the condition revealed.

4. Menstruation has occurred regularly since the operation, bleeding being profuse and lasting three days.

5. Both patient and her husband gave unquestionable histories of gonorrhœa.

The second case was operated on to produce premature menopause for a rapidly growing fibroid uterus.

Case 2.—L. A., white, æt. 28, married six years, no children. Patient believed that she miscarried twice when about two months pregnant, the last time four years ago. Since puberty, menstruation has been very profuse and painful. For the last four years she has been bleeding three-quarters of the time, and latterly has been incapacitated for work. Abdominal section September 11, 1889. Removal of both appendages for double hydrosalpinx and left ovarian cyst. There was also a small cyst in the right ovary. The adhesions were universal and exceedingly tough, making the removal difficult. The uterus was large and hard. Irrigation and drainage.

Patient made an uninterrupted recovery, and is now sitting up. This case is particularly interesting, as before operation it seemed a fit case for electricity. The uterus being high in the pelvis and large, the condition of the appendages was not easily discoverable. Irrigation and drainage were used for fear of hæmorrhage from the separated adhesions.

The third case is interesting on account of the comparative variety of the tumor.

It was removed Sept. 8, 1889, from the breast of Mrs. P., white, age 32, married six years, two children. When the patient began to menstruate, at the age of 16 years, she first noticed a small lump in the inner of left breast, on a level with the nipple. It occasioned no trouble. It remained quiescent during her first gestation and nursing, in fact until three months after her second child was born, when it began to enlarge. She never had any difficulty in nursing, but remarked that after the tumor began to grow she had less milk in the left breast. At this time, also, the tumor pained her for a few days and led her to fear an abscess. The pain subsided, but the enlargement continued. She was afraid of cancer, and desired the tumor removed.

When seen, the tumor was somewhat larger than it now is. The skin was normal in appearance and freely movable over the mass. The superficial veins were enlarged. The nipple was not affected, and the growth appeared outside the areola. It was firmly adherent in the glandular structure of the breast, and required dissection by the knife. Its contents had the greasy, sticky, cheesy appearance of a dermoid cyst. There were no other points of thickening or hardness discovered in the breast.

I believe it to be a solid milk cyst. Microscopic examination has not yet been made.

Dr. W. L. Taylor reported the

REMOVAL OF A LARGE OVARIAN CYST, FOLLOWED BY RUPTURE OF THE RIGHT COMMON ILIAC VEIN.

The patient, of whose condition I beg to present the following history, was sent to me by Dr. D. L. Hetrick, of Bedford county, after he had diagnosed the existence of an ovarian cyst.

Miss L. M., æt. 24, single, tall, very much emaciated; abdomen enormously extended; puberty at 19; menses regular for three years, until July, 1887. Two weeks before her menstrual period, whilst in the harvest-field, after drinking a large quantity of cold water, had a severe chill. Menses failed to appear in July and August. In September, 1887, the menstrual flow reappeared, but there was no discharge again until March, 1888, when there was a slight flow for three or four periods, disappearing then until after the operation. In November, 1887, had an attack of malarial fever, but never was well after the chill in July. After this attack of malaria a lump appeared in right side of abdomen, which never caused any pain, but only a sense of discomfort from pressure, and which increased rapidly in size.

Upon examination the abdomen gave evidence of the presence of a very large encysted fluid, ovarian in character. On July 7 I operated, with the assistance of Drs. W. A. Carey and E. R. Kirby, and removed a non-adherent cyst of the right ovary. The fluid of the cyst was syrupy and very heavy, weighing fully fifty pounds. The pedicle was unusually thick and was tied in sections, and finally with a Tait ligature. The steps of the operation were devoid of special interest, and but little cyst fluid or blood escaped into the abdominal cavity. This was thoroughly washed out, and I remarked the absence of bleeding-points and proceeded to protect the intestines preparatory to the insertion of my parietal stitches. Noticing a slight oozing of blood from the region of the pedicle, I investigated, and found that a couple of veins, which were greatly distended, had ruptured just beneath my ligatures. These I tied securely and removed cloths. Whilst doing this, I noticed higher up—fully as high as the sacro-iliac juncture, and to the right side—what appeared like an adherent intestine, rapidly distending, with a central portion most distended.

This rapidly thinned out and gave every appearance of speedy rupture. Touching it gently with my finger, it burst instantly, and there was a frightful gush of blood. I quickly grasped with my fingers the bleeding vein, for such it proved to be, and once more it broke down. I then caught it with a large Pean forceps, which imperfectly controlled the hæmorrhage, and, guiding with my left index-finger a large curved needle, I separated the vein from its artery and carried ligatures securely around it. These immediately stopped all hæmorrhage, but caused a very decided and alarming venous swelling on either side of my ligatures. I removed the large quantity of blood carefully with my hands, and, fearing to even irrigate, closed up after introducing a drainage tube. At the close of the operation, which was lengthened by the hæmorrhage from three-quarters of an hour to nearly two hours, the patient's pulse was 160, temperature subnormal, and respirations about 40. Everything certainly pointed to a positive recurrence of hæmorrhage, and she was most carefully watched.

The amount of bleeding, as shown by the drainage tube, for the first twenty-four hours was small, comparatively speaking, one to one and a half drachms of bloody serum being removed about every two hours. On the third day the bleeding was more profuse; as much as one-half to three-fourths of an ounce was drawn off several times. But this rapidly diminished in quantity, and the tube was removed on the sixth day. On the fourth day the temperature rose to 102°, but quickly dropped to from 99° to 101°, the pulse remaining very frequent, about 120, until far along in convalescence. There never was at any time any evidence of interference with return circulation in right leg. There was, on about the fourth or fifth day, slight pain in right leg, but this also occurred in the left leg, and was rheumatic in character. Convalescence was rapid and uninterrupted, and patient returned home in about four weeks. The size of the vein from which the greatest hæmorrhage occurred was without doubt much increased at the point of hæmorrhage. This dilatation fitted in a sulcus in the cyst wall, and needed only the removal of its support—the cyst wall—and the sudden reflux of blood to cause its over-distention and rupture. Its location and relation to the artery and size proved it to be the right common iliac. The possibility of such a varicosed condition of either of the iliac veins should deter us from emptying a large cyst too quickly, or from turning it out whilst but partially emptied. A smaller canula and complete removal of fluid before the sack is drawn out would be much safer and render less likely an accident which, though infrequent, is yet possible. Here and there, filling up the sulci in the tumor wall, or the interstices between globules, these large veins are apt to distend, and the greater the pressure on either side, the greater will be this distension and thinning of the coats of the vein to the extent of the space. As long as the return of blood is hindered by the pressure of the tumor, and as long as this thin-walled venous sac has the support of the tumor wall, there is but little risk of rupture from over-distension. But remove this support suddenly, remove at the same time this interference with circulation, and we have, as in my case, a hæmorrhage almost uncontrollable. It is almost impossible to conceive of ligation of such a large and important vein without some interference with circulation—at least some œdema. But collateral circulation is plentiful between the two sides, and in my case all the veins were so enormously distended below the tumor that a compensatory circulation was soon established.

Three months after operation Dr. Hetrick kindly writes, stating that our patient is rapidly gaining flesh and is well.

DR. WILLIAM GOODELL: This seems to be an unique case. I have never met with anything of the kind. The theory of varicose condition of the veins is a plausible one. I have never seen anything like it in simple unadherent cysts. In intraligamentary cysts I have often torn deep-seated veins, and have had difficulty in checking the hæmorrhage.

DR. DRYSDALE: Accidents of this kind must be very rare. I have never met with anything of the kind. I imagine that it could only happen where the walls of the vein are diseased, or torn during the operation.

DR. E. W. CUSHING, of Boston: I have no knowledge of any case of rupture of a vein during operation, except from injury. I do not see how the removal of pressure could cause rupture in one place, where all of the veins are varicose, although I have known this to cause syncope.

DR. J. PRICE: I think that there is great danger of wounding the vein by the use of the Baker Brown or Peaslee needle. I think that there is one case on record in which the operator stuffed towels into the abdomen and put the patient in bed to die, without any attempt to secure the offending vessel. These accidents have occurred from traumatism, from manipulation, and wounds made by the use of instruments.

DR. WILLIAM L. TAYLOR: The hæmorrhage occurred so long after any traumatism could have happened, and was so much higher than the pedicle, that I think it cannot be attributed to traumatism. The hæmorrhage was spontaneous. It did not occur gradually, but there was a sudden gush of blood following the touch of my finger.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE.

Audi Alteram Partem.

The Use and Danger of the Nasal Douche.

To the Editor:—At the last meeting of the American Medical Association Dr. W. C. Richardson (THE JOURNAL, November 30, 1889), reported three instances of acute inflammation of the middle ear resulting from the use of a nasal spray under high pressure. Since some writers have recommended the spray for cleansing the nose on account of its safety as compared with the more dangerous nasal douche, it does not seem out of place to me to relate my own extensive experience with the use of the latter method. As long as numerous observations have shown that the douche can do harm, it ought not to be given into the hands of patients except on proper indications. This rule, however, is often overlooked, and the douche is not rarely recommended by general practitioners when of doubtful utility.

The only thing the douche can do, is to remove secretion, and it can do this more efficiently than any other method which the writer has ever tested, when the secretion is either abundant or tenacious. Especially is this true when it dries in the form of crusts, as in ozæna. It would of course not be good practice to let the patient remove the secretion for mere palliative purposes with the douche, when more radical means in the hands of the surgeon can cure the disease. Hence, about the only diseases in which I deem it best to give the douche to the patient are the atrophic forms of rhinitis or ozæna and the persistent suppurative rhinitis of children, which, if allowed to go on unchecked, may develop into ozæna. In the latter case, however, I advise the douche only if I cannot see the patient sufficiently often myself.

Personally I use the douche to remove secretion before applying topical remedies to the nose. I find it besides very valuable in searching for a minimal secretion for diagnostic purposes. For this purpose I let the water flow out of the nose into a black rubber basin in which every flake of mucus or pus is readily seen.

I have used the douche, at the least calculation, from 6,000 to 8,000 times in my office, without ever having seen any bad consequences. I have also recommended it to more than a hundred patients, and do not know that I can trace any accidents to its use, beyond, perhaps, one relapse of suppuration of the middle ear. If I have been more fortunate with the use of the douche than some other specialists, it may be due to some precautions which I habitually take. I never use the douche except when both nasal passages are permeable or until after I have made them permeable with forceps (in the case of crusts), or the use of cocaine.

Since the recommendation by Lucas I have always used a solution of bicarbonate of soda, about one-half per cent. in strength, in preference to salt. Not having used salt much I could not say whether it might increase the danger to the middle ear, but I do know that soda solution is rather more convenient for cleansing purposes than salt, although not quite as agreeable to the patient. The water should of course be blood warm.

I find a plain rubber bulb, the natural end of which is used instead of a nozzle, a more manageable instrument than the usual douches in the market or the fountain syringe. The pressure on the bulb can be varied by the hand, or stopped instantly whenever a desire to cough or swallow is felt, and the instrument is always ready for use.

Perhaps more than a dozen times patients have felt the water entering the ear while I was using the douche. With the intention of stopping the feeling of fulness in the ear to which this gave rise I at once inflated the middle ear with air the very first time this accident occurred to me. This procedure stopped all annoyance and no further consequences resulted. I have had the same experience perhaps fifteen to twenty times and it never led to any damage. If the use of the Politzer bag fills the ears and relieves the uncomfortable sensation, it is sufficient; if not, I resort at once to the Eustachian catheter.

The douche has proven a very reliable method in my hands in the treatment of persistent forms of chronic suppuration of the middle ear, especially when bilateral. It has been strenuously urged by Schwartze and his disciples that one of the best means of cleansing the suppurating tympanic cavity is irrigation through the Eustachian catheter. But this procedure is more difficult than mere inflation of air, and of course meets with resistance in small children. The nasal douche, practiced with the bulb as described by me, can easily force a free stream through both Eustachian tubes if some pressure be used. If necessary the patient may be directed to swallow at the same time. In some instances of suppuration of one ear only in which I could not succeed in forcing water through the catheter into the ear, I have used the douche with success, preventing the water from entering the other ear by pressing the finger into the meatus. However, since this is not an absolute hindrance to the flow of water into the tube, I would prefer in such cases irrigation through the catheter if possible. Washing out retained pus from the middle ear with the aid of the nasal douche has often assisted me in reducing the time of treatment of persistent suppuration of the tympanic cavity.

H. GRADLE, M.D.

Central Music Hall, Chicago.

BOOK REVIEWS.

LECTURES ON BRIGHT'S DISEASE. By ROBERT SAUNDBY, M.D. Edinburgh, F. R. C. P. London; Emer. Senior Pres. of the Royal Medical Society; Consulting Physician to the Hospital for Diseases of Women, Birmingham, etc., etc. With fifty illustrations. New York: E. B. Treat. 1889. Pp. vi, 290.

This is a thoughtful, scholarly presentation of a subject to which the writer has given much attention for years. The various topics of the work are well illustrated by the citation of clinical cases coming under his observation. A thorough familiarity is shown throughout with the work of the best investigators at home and abroad, while the character of the author's own work is shown by the number of illustrations which he has drawn from his own preparations.

INEBRIETY: ITS ETIOLOGY, PATHOLOGY, TREATMENT AND JURISPRUDENCE. By NORMAN KERR, M. D., F. L. S., etc. Second edition. London: 1889. Pp. 471.

The first edition of this work appeared only a little over a year ago. Such an early call for a new edition shows how favorably the book has been received. In general the author takes the same ground as do most of the recent writers upon the subject, namely, that inebriety is a nervous disease closely allied to certain forms of insanity, manifesting itself sometimes periodically, sometimes continuously; that the patient must have some predisposition to inebriety, the most potent cause being hereditary influence; and, in the matter of treatment, that the physician must be guided by the same principles in accordance with which he studies and treats other diseases. There is apparently nothing new on the subject of treatment. It is still a vexed question, on which authorities differ.

MISCELLANY.

LETTERS RECEIVED.

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Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 28, 1889, to January 3, 1890.

By direction of the Secretary of War, the leave of absence granted First Lieut. Julian M. Cabell, Asst. Surgeon, in S. O. 249, A. G. O., October 25, is extended one month. S. O. 304, A. G. O., December 31, 1889.

By direction of the Secretary of War, par. 1, S. O. 180, Dept. of the Missouri, December 6, 1889, transferring First Lieut. Nathan S. Jarvis, Asst. Surgeon, from Ft. Lewis, Col., to Camp Wade, Kingfisher, Ind. Ter., is confirmed. Par. 6, S. O. 303, A. G. O., December 30, 1889.

By direction of the Secretary of War, the leave of absence granted Capt. E. A. Mearns, Asst. Surgeon, in S. O. 244, October 19, 1889, from this office, is extended two months. S. O. 303, A. G. O., December 30, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 4, 1890.

Medical Inspector Jno. H. Clark, ordered to the U. S. S. "Baltimore."

P. A. Surgeon Oliver Diehl, ordered to the U. S. S. "Baltimore."

Asst. Surgeon E. R. Stitt, ordered to the U. S. S. "Baltimore."

Surgeon Howard Smith, ordered to the U. S. S. "Alliance."

P. A. Surgeon J. D. Gatewood, ordered to the U. S. S. "Despatch."

Surgeon J. R. Tryon, ordered to the Naval Medical Examining Board.

Medical Inspector W. K. Scofield, ordered to special duty at New York City.

P. A. Surgeon D. M. Guitéras, ordered to the Naval Hospital, Philadelphia, Pa.

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ORIGINAL ARTICLES.

THE CLIMATIC CAUSATION OF CONSUMPTION.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HENRY B. BAKER, M.D.,

OF LANSING, MICH.

In order that one may be justified in bringing here an elaborate paper with extensive tables and illustrative diagrams, it is incumbent on the writer to make sure that he has either facts of importance which have not been published, or such new mode of grouping facts previously known as shall yield new and useful knowledge, especially when, as in this instance, the title of the paper is similar to that of other papers by the same person. Therefore I hasten to assure you that there are included in and with this paper facts which, so far as I know, have not been published, and others which have not in connection with this subject.[1]

This grouping of evidences on this subject has for its main purpose the learning whether three important generalizations relative to consumption are antagonistic to each other, as has commonly been supposed, or whether there are facts which serve to bind them together and harmonize them, and thus make each of the classes of facts upon which these generalizations are based tend to support a still wider generalization, which shall include all the preceding ones.

The general law to which I shall first give attention is the one established many years ago by Dr. Henry I. Bowditch, of Massachusetts, and nearly the same time in England by Dr. Buchanan. I refer to the generalization that residence on low, moist ground tends toward the occurrence of consumption.

Next in order, and in connection with the first, I shall deal with a generalization to which, during recent years, I have myself been asking attention. I refer to the proposition that exposure to the inhalation of cold dry air tends toward the production of consumption—that, in fact, this is a *controlling* cause of the disease.

Thirdly, the dominant generalization of our own time, that consumption has one *specific* cause, and that cause the *bacillus tuberculosis*, will be considered, or at least acknowledged.

At first thought these three propositions appear to be incongruous, and I think there is generally an idea that only one of them can be true; but I may here anticipate one conclusion in this paper by saying that it seems to me that each one of these propositions rests upon a secure foundation, and that as soon as this is accepted as established it will be possible to hold a much more complete and useful view of the causation of consumption than has previously been possible—a view which shall recognize the facts (1) that inoculation of a susceptible animal with the *bacillus tuberculosis* generally tends to cause consumption in that animal; (2) that, notwithstanding a wide dissemination of this specific cause, accidental inoculation with it, or its permanent lodgment in the human

[1] *List of Tables and Diagrams forming the Bases of the Evidence in this paper:*

Table 1 and diagram 1—Cronp, and temperatnre in Massachusetts.

Table 2 and diagram 2—Cronp, and absolute hnmidity in Massachusetts.

Table 3 and diagram 3—Consumption, and temperature in Massachusetts.

Table 4 and diagram 4—Small-pox, and temperature in Massachusetts.

Table 5 and diagram 5—Diphtheria, and temperature in Massachusetts.

Table 6 and diagram 6—Pneumonia, and temperature in Massachusetts.

Table 7 and diagram 7—Scarlatina, and temperature in Massachusetts.

Table 8 and diagram 8—Temperature, and sickness from pneumonia in U. S. armies.

Table 9 and diagram 9—Sickness from consnmption in white troops, U. S. army, and temperature, 1862–5.

Diagram 10—Temperature, and deaths from phthisis in London, thirty years.

Diagram 11—Temperature, and sickness from consumption in Michigan.

Diagram 12—Bronchitis, and temperature in London.

Diagram 13—Sickness from cronp, and temperature in Michigan.

Diagram 14—Temperature, and sickness from respiratory diseases in India, three years.

Diagram 15—Sickness from infinenza, and temperatnre in Michigan.

Diagram 16—Sickness from tonsilitis, and temperatnre in Michigan.

Diagram 17—Temperatnre, and sickness from bronchitis in Michigan.

Diagram 18—Sickness from pnenmonia, and temperatnre in Michigan.

Diagram 19—Absolute hnmidity, and sickness from pneumonia in Michigan.

Diagram 20—Pneumonia, and temperature in London, England

Diagram 21—Temperatnre, and sickness from scarlet fever in Michigan.

Diagram 22—Deaths from small-pox, and temperatnre in London, England.

Table 23 and diagram 23—Deaths from consumption in white troops in U. S. armies, and temperatnre.

Table 24 and diagram 24—Sickness from diphtheria, and temperature in Michigan.

These Tables and Diagrams will appear in THE JOURNAL of Jan. 25 and Feb. 1, 1890.

organism, is more favored under certain climatic conditions than under others; (3) that even after its introduction and lodgment in the organism, residence in cellar-like places tends to make the disease more fatal than does residence in more elevated, well-drained, warm and sunny places.

It has been generally understood that there are influences associated with low and wet localities, and, by contrast, with high and dry localities, which it is especially important for mankind to learn and heed; and yet the systematic attempts to obtain a scientific knowledge of the nature of these influences, or even their extent, have been very few. Some years ago two prominent physicians, one in this country, Dr. Henry I. Bowditch, and one in England, Dr. G. Buchanan, almost simultaneously undertook to learn the influence of residence upon low, wet ground on that most important of all diseases, consumption. More recently Dr. William Pepper has attempted to collect the evidence on this subject throughout the State of Pennsylvania.

DR. BOWDITCH'S INVESTIGATIONS IN MASSACHUSETTS.

Dr. Bowditch has said that the two following propositions contain the essential points of his address on this subject:

First.—A residence on or near a damp soil, whether that dampness be inherent in the soil itself, or caused by percolation from adjacent ponds, rivers, meadows, marshes or springy soils, is one of the primal causes of consumption in Massachusetts, probably in New England, and possibly in other portions of the globe.

Second.—Consumption can be checked in its career, and possibly, nay probably, prevented in some instances by attention to this law.[2]

These lines of proof, or argument, are drawn from the following sources:

1. Massachusetts State registration reports.

2. Medical opinion of Massachusetts, as embodied in the returns made to me, as a committee of this Society, these returns consisting of written reports from resident physicians of 183 towns.

3. Actual statistics of deaths from consumption, received from such correspondents. Some of these statistics are but *incidentally* mentioned, while others are from towns, districted and carefully examined with reference to the relative prevalence of consumption in the different districts. In some of the most important of these the examination was made without my correspondent or myself being aware of the existence of any law such as that which I shall present at this time.

4. Peculiarities of certain towns and of villages in the same townships, in some of which consumption is quite prevalent, and in others much less so, these differences being connected most closely with corresponding differences in the amount of moisture of the soil of said places.

5. Certain well-known houses which, in various towns, are known by the inhabitants and physicians to have been long noted as the abode of consumption, and in some of which several families have been, during the past fifty years, cut off by the disease without the least suspicion on the part of the occupants of the fatal position in which the houses were placed.

6. Confirmatory facts, statistics and opinions from Rhode Island, Maine and New Hampshire.

7. The medical statistics given in the report on the health of the United States army, strongly supporting the idea of the existence of the same law and the operation of it over the whole of the United States.

8. Results of my own practice since I first became convinced of the truth of the law, said results consisting of (*a*) statistics from my private medical record; (*b*) results actually derived from my choice of localities for consumptive patients, based on a belief in the law.[3]

[2] Med. Com. Mass. Med. Soc., Vol. x, No. 11, 1862, p. 67.

DR. BUCHANAN'S INVESTIGATIONS, IN ENGLAND.

Dr. Buchanan's very important contribution to our knowledge of this subject is so well summarized by Dr. William Pepper, that it seems best to quote from him, as follows:

The ninth and tenth reports of Mr. John Simon, Medical Officer of the Privy Council, contain the results of Dr. Buchanan's work, which was carried on in 1865, '66 and '67. Through this investigation it was discovered that in certain English towns where the drying of the subsoil had been accomplished by the construction of sewers, etc., and where the water supply had been improved, the mortality from phthisis had decreased. In Salisbury the death-rate from phthisis had fallen 49 per cent.; in Ely, 47 per cent.; in Rugby, 43 per cent.; in Banbury, 41 per cent.[4] In towns where no improvements had been made, or where the conditions were already good, there was no such corresponding change in the death-rate.

Dr. Buchanan summarizes the facts brought out in his investigation of phthisis in Surrey, Kent and Sussex, as follows:

There is less phthisis among populations living on pervious soils than among populations living on impervious soils.

There is less phthisis among populations living on high-lying pervious soils than among populations living on low-lying pervious soils.

There is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.

This connection between the influence of soil and phthisis was established by—

1. The general agreement in phthisis mortality between districts that have common geological and topographical features that are of a nature to affect the water-holding quality of the soil.

2. By the existence of a general disagreement between districts that are differently circumstanced in regard to such features; and

3. By the discovery of pretty regular concomitancy in the fluctuation of the two conditions from much phthisis with much wetness of soil to little phthisis with little wetness of soil.[5]

In his Tenth Report as Medical Officer, for 1867, Dr. Buchanan says:

But the connection between wet soil and phthisis came out last year in another way, which must here be recalled —(*d*) by the observation that phthisis had been greatly reduced in towns where the water of the soil had been artificially removed, and that it had not been reduced in other towns where the soil had not been dried.

5. The whole of the foregoing conclusions combine into one—which may now be affirmed generally, and not only of particular districts—that *wetness of soil is a cause of phthisis to the population living upon it.*

Dr. Buchanan quotes from the Seventh Annual Report of the Registrar-General for Scotland, from which I extract the following:[6]

[3] Med. Com. Med. Soc., Vol. x, No. 11, 1862, pp. 68–70.

[4] "Worthing, 36; Leicester, 32; Macclesfield, 31; Newport, 32; Cheltenham, 26. Bristol, 22; Dover, 20; Warwick, 19; Croydon, 17; Cardiff, 17; and Merthyr, 11;" according to the Medical Officer, page 15, Tenth Report Med. Officer of the Privy Council, 1867.

[5] Trans. Am. Climatolog. Assoc., May, 1886, N. Y., 1887, p. 89.

[6] Tenth Report Medical Officer, Privy Council, 1867, p. 109.

Let us see how such an explanation would agree with the very different proportion of deaths from consumption which occur in the eight principal towns of Scotland. Taking a five years' average (1857 to 1861 inclusive), it is found that, supposing all these towns are brought to an uniform population of 100,000 persons, there died annually from consumption 206 persons in Leith, 298 in Edinburgh, 310 in Perth, 332 in Aberdeen, 340 in Dundee, 383 in Paisley, 399 in Glasgow, and 400 in Greenock. The fact is, that if each town had been arranged in the order of comparative dryness of its site, they would almost have arranged themselves in the above position—Leith and Edinburgh the most free from consumption, and also having the dryest sites; Glasgow and Greenock the most ravaged by that disease, and beyond all comparison situated on the dampest sites. The above fact, then, with regard to the towns, corroborates, in the most striking manner, the conclusions of Dr. Bowditch, and should be a valuable help to the sanitary reformers, as to the very important measures which it is their more especial province to carry out.[7]

Referring to the conclusions based upon these investigations by Drs. Bowditch and Buchanan, Dr. R. Thorne Thorne, in his "Progress of Preventive Medicine during the Victorian Era," page 51, says:

I am aware that, in his sixth report (1879) on the Combined Sanitary District of West Sussex, Dr. Charles Kelly, basing his views on certain experiences derived from that rural area, has expressed a doubt as to the correctness of these conclusions. He says that the phthisis death-rate has been "distinctly lowered" in that district "in recent years," "while very little, if any, change has taken place during the same period in the drainage of the soil." Without entering into any criticism of some of the statistical data brought forward by Dr. Kelly in support of his views, I would here merely note, 1, that a large amount of agricultural drainage which had then already been effected throughout the kingdom would be expected to have produced a very similar result in rural districts to that brought about by sanitary drainage in towns; and 2, that Dr. Kelly offers no explanation of the definite and striking relations shown by Dr. Buchanan to have existed between the amount of diminution of phthisis death-rate and the extent and permanence of the lowering of subsoil water.

I have studied, with great interest, Dr. Kelly's "Sixth Annual Report," for West Sussex, published in 1880, as also one or two of his recent reports; and although I do not conclude that the facts and considerations he publishes controvert those published by Drs. Bowditch and Buchanan, they are of value, and especially in suggesting that coincidently with considerable progress in improved sanitary conditions of the surroundings, such as improved water supply, drainage, sewerage, etc., and improved methods of living, there has been apparently a great lessening of the mortality from consumption. Dr. Kelly says:

The great difference in the amount of consumption is probably dependent upon several causes. The improved state of the cottages, the rise of wages leading to the children being better clothed and fed, the increase in railway communication, which tends to diminish intermarriage, and to cause more interchange of population—all these changes, social as well as sanitary, have had their share in the improvement.

In his Fourteenth Annual Report, page 188, Dr. Kelly says:

[7] Tenth Report Medical Officer, Privy Council, 1867, p. 110.

It cannot be maintained that [all] deaths which used to be registered as phthisis are now included under lung diseases, because although there is an increase under the latter head, it is by no means equal to the decrease under phthisis.

Dr. Kelly, therefore, still claims that there has been an undoubted decrease of consumption in his jurisdiction.

Dr. Kelly's results reinforce the evidence heretofore collected, as to the influence of nearly all sanitary improvements in decreasing consumption, but they do not seem to me to have any force toward breaking down the evidence collected by Drs. Bowditch and Buchanan.

DR. PEPPER'S INVESTIGATIONS, IN PENNSYLVANIA.

Dr. Pepper's "Climatological Study of Consumption in Pennsylvania" seems to have been well planned, and carefully executed, but it did not yield results as convincing on the subject of the relation of soil moisture to consumption as did the investigations by Drs Bowditch and Buchanan, probably because of less perfect records of vital statistics in Pennsylvania, and perhaps also because of less attention having been given to the subject by local physicians in that State.

A few selections may be instructive:

It will be observed at once that those portions of the State where phthisis is rarest are the most elevated, having a general altitude of 1,500 to 2,000, or, better still, of 2,000 to 3,000 feet; while, in proportion as we enter districts of lower general altitude, we find correspondingly increasing rates of mortality from consumption.[8]

It may be noted that in Erie county, which has considerable average elevation, the mortality may be influenced by the proximity of the lake, and by the presence of a considerable body of low, wet land.

It will be seen further on, in the more minute study we have been able to make of Philadelphia, that the influence of elevation and of density of population appears to be considerable, and in accordance with what we have above stated.[9]

Dr. Bowditch and Dr. Buchanan each gathered evidence, from several sources, the combined force of which was very great, and after their results were united their conclusions were irresistible. As they have never been successfully controverted, it seems probable that the laws which they formulated will stand as a secure foundation upon which we may safely build. Wm. Pepper, M.D., LL.D., the distinguished Provost of the University of Pennsylvania, has said:

It is manifestly difficult to subject this theory to searching and conclusive investigation; but, so far as investigation has been made in other portions of this country or abroad, the evidence has tended to confirm Dr. Bowditch's position.[10]

But, if the grand truth, for which we are so much indebted to him, is really a truth, how comes it that the great reduction in consumption which should have followed its discovery has been as yet so little realized? There are, prob-

[8] Trans. Am. Climatological Assoc., May, 1886. New York, 1887, p. 98.
[9] Page 99.
[10] Trans. Am. Climatological Assoc., 1887, p. 88.

ably, several reasons, such as the slow progress which any such truth has in gaining acceptance, even among the thinking classes; but, in my opinion, one chief reason for the non-acceptance of, and for the non-action in accordance with this great discovery, was the fact that no one knew the *reason why* residence on or near low, wet soil was a prominent cause of consumption. The assertion and proof that this was a true law, when no one could imagine a reason why, has not led to its acceptance in such a hearty manner as to make it a strong factor in controlling the actions of residents of even New England. So that, although the death-rate from consumption in many parts of New England has steadily declined, it has not declined as fast as a knowledge of such an important general law as that propounded by Dr. Bowditch might have led one to expect; and it is with a feeling of sadness that one knowing this must now read the lines written by Dr. Bowditch over a quarter of a century ago, and which glow with lofty sentiments of manly enthusiasm. Not but that *his* work was well and nobly done, but the sadness comes because mankind is so slow to heed the warnings of its best prophets. Dr. Bowditch said:

> When I revolved in my mind the possibility of this being an exact representation of a great truth, and then thought of the vast influence the thorough knowledge of it must have upon our professional practice, and of the beneficial effects upon public hygiene that would perhaps result, *in future*, from an intelligent obedience to it by the community at large, it was the happiest and most satisfactory moment of my professional life. I remembered that over twenty thousand[11] consumptive patients had died in Massachusetts during the previous five years. I asked myself these questions: Supposing this township represents the various townships of the State, and that they all have their varieties of soil, then if this township's statistics are true, and at least twice as many die in the wet as in the dry districts, may not similar results have occurred and perhaps be still occurring all over the State in which these twenty thousand human beings have been slain? Having arrived at this point, you will not be surprised at my asking, still further, this pregnant question: If our fathers and we had paid greater attention to this law, and we had always resided in dry localities, leaving the lower and moister for the purposes of business, perhaps, during the day, or for agriculture, should we not be saving over one thousand lives annually in Massachusetts, which are now foolishly sacrificed? These questions I then answered but imperfectly, but statistics since received, and of which I shall hereafter give you, I hope, more convincing examples, have only made me, each year, more firm in the conviction of the affirmative of these questions, at least in all their essential elements.[12]

The writer of this article accepts the evidence collated by Dr. Bowditch in Massachusetts, by Dr. Buchanan in England, and by Dr. William Pepper in Pennsylvania. I accept it because it seems convincing, because it has not been controverted, because it is in harmony with the several lines of evidence which I myself have collated, and because I think I know *why* it is true; and one chief object of the preparation of this essay is the hope that the reason why may be made plain, and that thereby the realization by mankind of the grand results aimed at by Dr. Bowditch may be aided.

In order to learn the reason for the truth set forth by Dr. Bowditch, let us first inquire what are the principal meteorological differences between high and dry localities, and low and wet localities.

CLIMATIC CHARACTERISTICS OF LOW AND WET, AND OF HIGH AND DRY LOCALITIES.

Atmospheric Pressure.—It is at once apparent that between "high" and "low" localities there is, of course, the difference in atmospheric pressure; but the difference in atmospheric pressure due to the few feet difference in elevation between the best and the worst localities studied by Dr. Bowditch could not have had great influence.

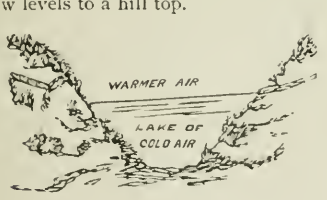
Atmospheric Humidity.—The next most noticeable element is the atmospheric moisture; and here, in my opinion, we strike the point from which our friends, in times past, have almost uniformly diverged from the path which would have led them to the truth. They have assumed, apparently, that a wet *soil* always tends to make a moist *atmosphere* over that soil, and although this is true if we speak only of the *relative* humidity (which is the per cent. of saturation of the air with vapor of water), it is not true if we speak of the *absolute* humidity (which is the amount of vapor of water which the air actually contains). Our predecessors have uniformly considered only the relative humidity, while, as I hope to show, it is mainly the absolute humidity that has influence in the air passages; for the reason that the air exhaled, having been in contact with the warm and moist surfaces in the lungs and air passages, leaves the body, uniformly, summer and winter, at about the same temperature—near 98° F., and nearly saturated with the vapor of water at that temperature. According to Glaisher's and Guyot's tables, air at 98° F., saturated with vapor, contains about 18.69. grs. of vapor in each cubic foot of air. This being so, the quantity of moisture taken out of the lungs and air passages in excess of that inhaled depends, not upon how nearly saturated with vapor the air may be when it is inhaled—not upon its relative humidity, because if saturated at zero it can contain only ½ gr. of vapor, at 32° only 2 grs., at 70° 8 grs., etc.—but the quantity of moisture exhaled in excess of that inhaled mainly depends upon the *absolute* humidity of the atmosphere. If air at zero, saturated with vapor, is inhaled, each cubic foot of it when exhaled will abstract from the lungs and air passages about 18 grs. of vapor of water.[13]

What are the important influences connected

[11] In Registration Report, 1857, we find that during the five years including 1853 to 1857, 23,280 died of consumption in Massachusetts.
[12] Med. Com. Mass. Med. Soc., Vol. vi, Part ii, 1862, pp. 88, 89.

with the excessive exhalation of water from the air passages?

Atmospheric Temperature.—Before answering the foregoing question, however, let us fully understand why it is that residents over a cold *damp soil* are surrounded by an *atmosphere* which is cold and *dry*, absolutely, and which takes *out of the lungs* and air passages *larger* quantities of moisture than does air over a warm and dry soil. The main reason is that the atmosphere over low and wet soil is nearly always cold, as will presently be made apparent. And, as already pointed out, cold air is always, necessarily, dry air, so far as relates to the absolute quantity of moisture; although, because its capacity to hold moisture is slight, and because it has usually been cooled from a higher temperature, in which condition it held more vapor, cold air is frequently saturated with moisture —its *relative* humidity is great, but its *absolute* humidity is small. On the other hand, the atmosphere over high and dry localities is generally warmer, especially when the air is still (as it usually is at night), because then the cold air, being heavier than warm air, settles down into the valleys, and flows along water-courses, while the lighter warm air rises and remains on a higher plane. The sensations of any ordinarily sensitive person are sufficiently acute to detect the cellar-like atmosphere of the valleys and water-courses, on still evenings, when one goes down into them from the higher levels; and the sudden transition from such coolness to noticeable warmth is often very apparent to one who ascends directly from the low levels to a hill top.



A COLD VALLEY.

In speaking of a house in which a case of consumption originated, Dr. Bowditch described the locality as follows:

> On each side of this valley arise high and sandy hills. With each evening sunset, a flood of cold moisture, almost if not quite imperceptible to eyesight, but quite palpable to the sensitive skin of the traveler, settles in between the hills and gradually envelops this devoted house. I have often passed the spot late at night. At times the moon shone clearly on the immediately adjacent ridges, but as I descended from them and passed the house, the rays were obscured, and a chilly feeling came over me, as if taking a cold bath.[14]

While the sun shines, the valleys are frequently warm, and the valleys and low levels are frequently protected from winds, yet, as soon as the sunshine is withdrawn, the general law that warm air is lighter than cold air results in there being *generally* a lake of cold air in all basin-shaped localities, in there being streams of cold air flowing down[15] water-courses, and, generally, in the accumulation of cold air over every locality which is sufficiently basin-shaped that it retains water in or upon the soil. This is one reason why a low, wet place is generally cold. Another reason is that the evaporation of water produces cold, therefore, whenever the atmosphere is not fully saturated with vapor of water, a wet locality is for this reason colder than a dry one. This is one reason why underdraining a soil makes it warmer.

Frosts in Low, Wet Localities.—The fact that low, wet localities are generally cold is of such importance that I do not wish to slur it over, but to present sufficient evidence to make it conclusive. One line of evidence is that of the effect on tender vegetation. The fact that a "killing frost" occurs on low, wet places frequently when the uplands escape, is well known. It is also well known that, in districts where peach trees are grown, peach orchards on the hills frequently escape when those on the low lands are killed by the cold.

Thermometric Observations, on Low Lands.—Experiments made a few years ago by Prof. R. C. Kedzie, at the Michigan Agricultural College, *proved* that self-registering thermometers exposed on the high ground registered a higher temperature, by several degrees, than those exposed on adjacent low grounds; and that the cold air apparently flowed down the natural water-course through the grounds. Comparative observations made by Mr. W. C. Haines, at Lansing, Mich., prove that in a valley, along the bottom of which runs a small stream, a self-registering minimum thermometer (which had been compared with a standard instrument), generally shows the minimum temperature, even in winter months, to be lower than it is on the high ground in the State Capitol Square, in the same city, the difference in the *elevation* being only about 25 feet.

The Atmosphere at Low Levels is Coldest at Night.—The greater cold at low levels is most frequently at night; and it is worthy of note that it is *at a time when artificial heat is not usually employed;* and, although one may be warmly covered in bed, no method has been in very general use for the warming of the air inhaled under such circumstances, so that the lungs and air passages are more influenced by cold nights than by cold days.[16] Observations made for the Royal Meteorological Society of London, England,[17] at Boston, Lincoln-

[13] If air at zero is warmed without being supplied with moisture, and then inhaled, its drying effects on the air passages will, of course, be the same as if breathed at the low temperature.

[14] Med. Com. Mass. Med. Soc., 1862, p. 93.

[15] If the wind is up stream, the flow of cold air may be up stream; but see results of Prof. Kedzie's experiments mentioned further on, under the heading: "Thermometric Observations on Low Lands."

[16] The curve for ozone at *night* in Michigan is almost precisely the same as the curve representing sickness from pneumonia.

[17] Quar. Jour. Royal Met. Soc., October, 1887, p. 275.

shire, 4 feet from the ground, and at 170, and at 260 feet from the ground in the church tower, and which the Secretary of the Society says are "superior to any observations heretofore made," show that—

The *minimum* temperature at 4 feet is generally colder than at 170 feet, except in winter months, when the latter is generally colder than the former. . . . The mean temperature at 4 feet, during the day hours, is always in excess of that of 260 feet, the difference during the summer months amounting to about 4° at the warmest part of the day. *As night comes on the difference becomes less.*[18]

The general results therefore show that the diurnal range of temperature is much less at the top of the tower and on the belfry than at 4 feet above the ground.

In foggy weather the temperature at the top of the tower is always warmer than at 4 feet, the upper part of the tower being generally free from fog.[19]

Fogs over Low Lands.—As illustrating the fact that fogs are most frequent over low, wet and cold levels, the remarks by the Secretary of the Royal Meteorological Society are applicable. He says: "The object of the Council in transferring the instruments to Lincoln was to obtain results from a differently situated place. The base of Boston Church was only a few feet above sea level, and the country round was very flat, while Lincoln Cathedral was situated *on a hill and was thus free from the ground fogs which so frequently occurred at Boston.*[20]

It is proper to state that Dr. Bowditch has said:

While claiming dampness of the *soil* as *one of the prime causes of consumption in New England, I do not assert that it is the sole cause, or that the combination of changeableness and coldness with moisture, may not be vastly more fatal than moisture alone.*[21]

Hillsides are Warmer than Low Levels.—It will be seen by the careful student that Dr. Buchanan carried the investigation, or at least his exact summarizing, further than Dr. Bowditch did; and, although *he* has not taught us what there is about wet, low-lying soils that causes phthisis, he has supplied us with one very important generalization, namely: "There is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.[22] In the light of what has been pointed out in this essay, the reason for this now seems obvious—the sloping impervious soil permits the cold overlying atmosphere to fall into the valleys below, while the flat impervious soil not only retains its own cold atmosphere but tends to send up the slope its warmest air, and to take in exchange the coldest and heaviest atmosphere from the surrounding slopes. Although Dr. Bowditch did not in his summary clearly state the generalization that *sloping* impervious soils are not as dangerous as *flat* impervious soils, portions of his address show that he held it in mind, for he says:

I believe that all towns, parts of towns, houses even that *rest on* damp, cold soils, are by that very fact liable to the prevalence of consumption. I believe that similar locations *near* wet meadows, rivers, marshes, etc., though less subject to the law, are nevertheless, in a lesser degree, promoters of consumption in the families resident thereupon. Even hills, with clayey subsoil retaining moisture, though not absolutely evil, are less good than a perfectly dry, porous soil, removed from any moisture.[23]

Again, in speaking of choosing a site for a dwelling-house, Dr. Bowditch says:

It should be in a portion of the township which is neither so high as to be exposed to violent gusts of weather, nor so low that moisture will collect around it. Let it be on the side of a hill, or plain, open to the south, and, if possible, defended from the north and east, on a dry, porous soil, through which water freely percolates, and which, even after a rain, retains little moisture.[24]

SUMMARY: ELEMENTS OF CLIMATE CHARACTERIZING LOW, WET LOCALITIES.

Perhaps this part of the subject has now received sufficient attention to have established the points which it seems important should be understood, namely:

1. That the *atmosphere* over low and wet localities is *cold*, especially *nights* when, because of there frequently being no fires, the lungs and air passages are in most danger of injury, by the inhalation of cold air.

2. That the atmosphere in such localities is, more frequently than at higher levels, saturated with vapor of water, as shown by psychrometric observations, and also by the presence of fogs, etc., and, what is most important—

3. That, because the capacity of cold air to contain vapor of water is very small, the absolute quantity of water contained in the atmosphere in low, wet and cold localities is very small—the atmosphere there is cold and dry, absolutely.

EFFECTS ON LUNGS AND AIR-PASSAGES OF INHALING ATMOSPHERE OF LOW LEVELS.

Therefore, when such air as is usual on low levels is taken into the air-passages and lungs, containing, as it does, only a very few grains of vapor (air at zero containing at most only half a grain to each cubic foot), and is exhaled saturated with moisture at about 98° F. (each cubic foot of air then containing 18.69 grains of water), an excessive quantity of moisture is abstracted from the lungs and air-passages and an excessive quantity of the non-volatile salts of the blood (which pass into the air-cells from the blood with the fluid which normally keeps the air-cells moist), an excessive quantity of these salts is left in the air-cells and on the mucous lining of the air-passages. This is not stated on hypothesis alone, although this conclusion was reached *a priori* from causes known; but it has since been *proved* to be true by reliable and sufficient statistics of sickness and of coincident meteorological conditions, and by chemical analyses of the lungs and

[18] Same page—275. Italics mine.
[19] Quar. Jour. Royal Met. Soc., October, 1887, p. 277.
[20] Same Vol., p. 280. Italics mine.
[21] Med. Com. Mass. Med. Soc., Vol. x, No. 11, 1862, p. 90.
[22] Trans. Am. Climatol. Ass'n, 1886. New York, 1887, p. 90. The original is in paragraph 3, on page 109. Tenth Report of the Medical Officer of the Privy Council, 1867, London, 1868.
[23] Med. Com. Mass. Med. Soc., Vol. x, No. 11, 1862, p. 122.
[24] Page 124.

sputa. Thus, by abundant statistics I have proved[25] (and the evidence with this essay tends strongly to support this view) that at such times as pneumonia, bronchitis, influenza and other diseases of the throat, lungs and air-passages most prevail, the atmosphere is cold and dry (absolutely, although the relative humidity or per cent. of saturation may be great). Dr. Redtenbacher,[26] in 1850, and since him many another person, has shown that during the onward progress of pneumonia chloride of sodium, which is normally present, disappears from the urine. Lionel Smith Beale, M.B., has shown[27] by analyses that the chloride of sodium which, during the onward progress of pneumonia, disappears from the urine, is found in the sputa and in the solidified lung. It is therefore *proved* that just preceding the greatest prevalence of these irritative and exudative diseases of the lungs and air-passages the air inhaled is unusually dry, that the evaporation of moisture and, by inference, the quantity of non-volatile salts left thereby, is unusually great; and that, as proved by analyses, the chlorides are in the sputa and in the solidified lung in unusual proportion; that, notwithstanding the action of the lymphatics, these irritant salts accumulate there. The irritation of influenza, the bronchial cough, the exudation on the surface of the air-passages and sometimes into the air-cells, under such circumstances does not, therefore, seem wonderful. It seems now to be explained. Yet there is still more evidence connecting the presence of sodium chloride in the fluids which moisten the air-passages with the exudation of the albuminous constituents of the blood serum. Experiments by Brücke and afterward by Hoppe[28] have proved that although albumen will not pass through an animal membrane toward pure water, it will pass to a solution of salt; and Hoppe's experiments proved that the passage of the albumen is in proportion to the rapidity of the movement of the fluid.[29]

It would seem, therefore, that the more rapid the evaporation of fluid from the air-passages, and the faster the fluid is exuded toward the unusually strong solution of sodium chloride in the air-cells, the greater the proportion of albumen which will exude into the air-cells. This has an important bearing upon the causation of consumption, because it is quite a common belief, resting upon many observations, that consumption not infrequently follows exposure to taking "cold." Besides, from the work of Prof. R. Koch and others it seems that we must conclude that the introduction into the body of a susceptible person of the *bacillus tuberculosis* is generally followed by tubercular consumption. Therefore, as an albuminous exudate on an irritated or inflamed surface in the air-passages, maintained at the temperature of the human body, supplies a "culture fluid" and temperature conditions which are well known to be favorable to the reproduction of the *bacillus tuberculosis*, it follows that exposure to the inhalation of those bacilli at such times as such an exudate is present in the air-passages must lead to a larger than the average proportion of instances in which such bacilli are enabled to gain a successful lodgment in the air-passages. And since it has been proved that inoculation with the *bacillus tuberculosis* in other parts of the body is not infrequently followed by tuberculosis of the lungs, it seems to follow that the bacilli are caused to exude into the air-passages (brought there from tuberculous foci in other parts of the body); and it would seem that they would be most likely to be exuded, and, if exuded, to maintain a lodgment there at such times as exudation into the air-cells or air-passages is greatest. Therefore, consumption of the lungs should be contracted most readily at such times as croup, influenza, bronchitis and pneumonia occur. Let us examine the evidence of our vital statistics, in order to ascertain whether or not this hypothesis is in accordance with the facts.

DO IRRITATIVE, EXUDATIVE DISEASES OF THE AIR-PASSAGES AND LUNGS ACCOMPANY OR PRECEDE CONSUMPTION?

At the outset we are met with the difficulty that in most States and countries no sufficient statistics of *sickness* are recorded; but inasmuch as the same course of reasoning, as to the favoring of the reproduction of the bacilli in the lungs and air-passages by the occurrence of a saline and albuminous exudate, will apply to the later stages of consumption as well as to the first, it follows that the *deaths* also from consumption should be most frequent following the occurrence of those conditions which cause the exudative diseases of the air-passages.

For the purpose of answering the above question, and to supply the evidence on which this essay is mainly based, twenty-four tables and twenty-four diagrams, accurately drawn to scale and graphically exhibiting the essential facts contained in the tables, are submitted herewith. The first seven tables and diagrams show the relations which the deaths reported from consumption and from each of several diseases in Massachusetts sustain to those from each of the other diseases and to the atmospheric temperature. And since the absolute humidity of the atmosphere is so greatly controlled by the temperature, and the curve for absolute humidity in this part of the world, as shown by a comparison of it in diagram No. 2 with the curve for temperature in diagram No. 1, is almost the same as the curve for tem-

[25] Proceedings Mich. State Board of Health, Oct., 1886, pp. 7–11; Trans. Am. Climat. Assoc., May, 1886, New York, 1887, pp. 226–233; Mich. State Board of Health Report, 1886, pp. 246–324; 1887, pp. 197–211; 1888, pp. 143–160.

[26] Zeitschrift der K. K. Geselschaft der Aertze zu Wien, Aug., 1850.

[27] Trans. Medico-Chirurg. Soc., Vol. xxxv, 1852.

[28] Virchow's Archiv, Vol. 9, 1856, pp. 248–268.

[29] Virchow's Archiv, Vol. 9, 1856, pp. 265–267.

perature, the several diagrams also show, to whomsoever will hold these facts in mind, the relations of the deaths reported from the several diseases to the *absolute humidity* of the atmosphere. For one disease, croup, diagrams 1 and 2 illustrate these relations fully.

In studying the relations of the several diseases it should be borne in mind that the average *duration* is not the same for all; therefore, it cannot be expected that there would be exact uniformity—that the time between the exposure to the cause and the fatal result shall be the same for all diseases. Bearing this in mind, an examination of the several diagrams shows that these diseases sustain such relations to the temperature and absolute humidity of the atmosphere as to indicate that these conditions are causal.

A very noticeable departure from quantitative relations—the same in different parts of the year—is to be seen in the diagrams relative to croup, consumption and diphtheria, and is slightly apparent in the curves relating to small-pox. It is a *lower* curve than proportional in those months when the atmosphere is becoming more warm and moist, and a *higher* curve in those months when the atmosphere is constantly becoming cold and dry. It is as if those who were injured by a very cold dry air do not die if warmer weather ensues, and those taken sick in comparatively warm weather die in unusual proportion in the autumn months, as the weather constantly becomes colder and drier. This is strongly marked in diagram No. 3, relating to consumption. In that diagram, considering the fact of the general relations of the two curves, there are also hints that possibly consumptives guard against exposures more successfully in the coldest months. It is quite possible, and I think probable, that these statistics of deaths from consumption in Massachusetts in recent years are modified by the great numbers of consumptives and persons with susceptible lungs who leave that State in the autumn and do not return from their southern trip until spring. This becomes more apparent when one compares diagram No. 3 with diagrams exhibiting the curves for consumption in some other parts of the world, although the same principles seem to hold, to some extent, in most cases; but in the diagrams of deaths and of *sickness* from consumption in the United States armies during the war of the rebellion it is much less apparent than it is in the diagram (No. 3) relative to deaths in Massachusetts.

Turning now to the more extensive mortality statistics in London, England, it is seen, by a glance at the several diagrams (diagrams 10, 12, 20, 22), that the curves for the diseases of the lungs and air-passages follow the curves for atmospheric temperature with such uniformity as to indicate quantitative causal relations. That the curve for consumption in London (diagram No. 10) does not fall so noticeably as it does in Massachusetts in the winter months, may be, in part, due to the fact that the statistics extend back to a time when journeys southward in the autumn were not so much the custom as at present.

The diagrams show that in London the deaths from consumption do follow, from one to three months later, the deaths from bronchitis and pneumonia.

Tables and diagrams 8, 9 and 23 exhibit the facts respecting the rise and fall of the *sickness* from pneumonia and consumption, and the *deaths* from consumption in the United States armies during the war of the rebellion. The statistics are quite extensive, and as they exhibit the facts relative to the sickness as well as the deaths, they are especially valuable. It will be seen that the sickness and the deaths from consumption do in general follow the sickness from pneumonia; also that the sickness from pneumonia follows the changes of atmospheric temperature with such closeness and regularity as to show that, directly or indirectly, the temperature sustains causal relations.

That the control of diseases of the air-passages by atmospheric temperature is not confined to this country and England, but applies also to countries having very much warmer atmosphere, is proved by the table and diagram No. 14, which show that in India the diseases of the air-passages (not including consumption) are controlled by the temperature.

Finally there are submitted herewith tables and diagrams (Nos. 15 to 21 inclusive) proving that in Michigan (in which State valuable statistics of *sickness* are collected) the *sickness* from nearly every one of the entire class of diseases of the air-passages and lungs is controlled by the atmospheric temperature, and that the sickness from consumption follows, in general, the law which has herein been pointed out.

In all the countries, States, cities and armies concerning which I have thus far studied the statistics relating to this subject, the same law seems to hold: a very considerable proportion of the *sickness* and the *deaths* from consumption follow, or sustain such relations to, the irritative and exudative diseases of the air-passages and lungs as to prove a necessary or causal relation; and these other diseases of the air-passages and lungs are quantitatively related to the temperature and absolute humidity of the atmosphere, proving that, directly or indirectly, they are controlled by these atmospheric conditions. I have pointed out how, in my opinion, this occurs, namely, indirectly through the absolute humidity of the atmosphere, which, so far as its maximum is concerned, is absolutely controlled by the temperature, cold air being always necessarily dry air.

Nor is this all of the evidence. As elsewhere pointed out, it is proved that the deaths from

small-pox follow the same law, as should, theoretically, be the case, because the same remarks, as to the saline and albuminous exudate in the air-passages at the temperature of the body being the best possible "culture fluid" and temperature conditions for the specific cause of consumption, apply as well to the specific cause of small-pox. Therefore, the accompanying tables and diagrams (4 and 22) on this subject are submitted in this connection.

The fact that small-pox and other diseases known to be communicable and to enter the body by way of the air-passages are in great part controlled by the atmospheric temperature, as is shown by diagrams 4, 5, 7, 22 and 24, is, by itself, strong presumptive evidence that such a disease as consumption, a disease in which also the specific cause is believed frequently to enter the body by way of the air-passages, will be controlled by similar atmospheric conditions.

A comparison of diagrams 10 and 22 shows that the curves for deaths from small-pox and consumption in London, England, are almost identical. This must have come about through the inhalation of cold air, which led to irritations and exudations in the air-passages and lungs, and thus favored the contraction of both of these diseases; but, inasmuch as otherwise we would admit that the average duration (of the periods of incubation and of the diseases) was the same in both diseases, it would seem to be proved that the progress of the *later* stages of consumption also is influenced by the irritation and exudations caused by the inhalation of cold air. How this is possible has already been explained.

A LARGE PROPORTION OF THOSE WHO HAVE CONSUMPTION RECOVER.

That there are conditions under which human beings recover from consumption seems to be well proved by many observers. Dr. H. P. Loomis, of New York, is recently reported to have stated that "in no less than 60 per cent. of all patients dying at Bellevue Hospital there were old tubercular changes in the lungs, the disease having been recovered from."[30]

If 13 or 15 per cent. of all deaths are from consumption, and 60 per cent. of those who die of other diseases have had consumption, or at least "tubercular changes in the lungs," from which they have recovered, it would appear that the specific cause gains a lodgment in 73 per cent. of all persons, and proves fatal in only about 13 or 15 per cent. of all persons. This has an important bearing upon the view that the *bacillus tuberculosis* is the only cause which it is worth while to study. A recent writer, speaking of tubercular phthisis, said: "In the autopsies made at the Philadelphia Hospital it is surprising to see the almost universal presence of this disease, in a more or less active state, in patients dying from other affections, such as Bright's disease or carcinoma.[31]

Dr. E. L. Trudeau, of Saranac Lake, N. Y., has said:

> Vibert recently, while making 131 autopsies at the Paris morgue on persons who had come to their death by violence while apparently in good health, noted in twenty-five—that is, in more than nineteen per cent.—the presence of some slight tubercular lesion. In seventeen of the twenty-five a few calcarious and fibrous nodules remained as the only evidence of an unsuspected and arrested tubercular process, but in none were the pathological changes in the lungs extensive. Recovery often follows the operations now undertaken for tubercular peritonitis, though it is evident that all the infectious material cannot be removed.
>
> The records of the autopsies made by Vibert, Councilman and others, as well as the evidence offered by the present research [Dr. Trudeau's experiments on the influence of environment on consumption], furnish proof that the tissues themselves can, under certain conditions, either limit the destructive action of this microbe [*bacillus tuberculosis*], or even entirely rid themselves of its presence.[32]

The experiments by Dr. Trudeau on the influence of environment on the course of tubercular disease artificially induced by the inoculation of animals (published in the "Transactions of the American Climatological Association" for 1887 and 1888) have demonstrated, apparently, that something similar to what has been set forth by Drs. Bowditch and Buchanan as true of the influence of climatic environment on mortality from consumption in the human species, is true relative to animals. Rabits inoculated with the *bacillus tuberculosis* and kept in a cellar-like place on restricted diet, died of the disease in much greater proportion than did similar animals similarly inoculated but kept in the open air with abundance of food. Under such favorable conditions a large proportion of the animals recovered so far, at least, as to maintain good health, although the local infection was not destroyed, but only circumscribed.

THE CAUSATION OF CONSUMPTION IS COMPLEX.

It seems to be difficult for the human mind to grasp more than one idea at a time. Accordingly we find a strong tendency to assume that there is and can be but *one* cause or essential condition leading to consumption; but nothing is more certain than that the forces and reactions in nature are complex, and to me the evidence is conclusive that the causation of consumption is complex. But, although complex, I believe the problem is now quite within our grasp, in all its most important features, if we only hold fast to the truths we have learned of the relations of consumption to low, wet places, while we grasp the obverse idea of the favorable influences of high, dry and sunny places; hold fast to this double image of one great truth, while we lay hold of that one

[30] Jour. Am. Med. Assoc., May 18, 1889, p. 718.
[31] J. H. Musser, M.D., reported in the Medical and Surgical Reporter, Philadelphia, Jan. 26, 1889, p. 102.
[32] Trans. Am. Climatolog. Assoc., 1888, pp. 93–94.

which teaches us the great importance of proper clothing, food and all that goes to make the nourishment of the body fully equal to all demands upon it; hold fast to this rather complex thought while we grasp the great truth which Dr. Robert Koch has given us, that there is a specific cause which *under favoring circumstances and conditions* is an essential factor in the causation of consumption; and, while holding all this in mind, I ask you to consider how it is that this specific cause usually enters the body, and the fact that just as the specific causes of many other diseases (as is proved by the statistics of sickness and deaths which I present to you at this time), just as they enter and cause the disease in proportion to the coldness and dryness of the atmosphere, so the specific cause of consumption apparently and probably finds lodgment in the lungs and air-passages, other things being equal, in proportion to the coldness and dryness of the atmosphere; and not only this, but the danger of auto-infection and of death to one in whose body the disease is already present is increased by exposure in an atmosphere unusually cold and dry, while the condition of the blood is such that saline and albuminous exudates are liable to occur in the air-passages.

Finally, in order to grasp the most at once, we need to link the facts together, realizing the fact that over the low *wet soil* there is generally a *cold, dry atmosphere*, thus making it plain that the facts observed and collated by Drs. Bowditch and Buchanan are entirely in harmony with those observed by Dr. Koch, and with the enormous numbers of facts which I have tabulated, and which prove beyond question that there is a causal relation between the inhalation of such an atmosphere and the occurrence of all the ordinary diseases of the air-passages and of those communicable diseases which enter by way of the air-passages, including tubercular consumption.

ONE RELATION OF STATISTICS OF CONSUMPTION TO STATISTICS OF TEMPERATURE.

By Diagram No. 10, it may be seen that in the City of London during thirty years the fluctuations in the number of deaths from phthisis followed the fluctuations of temperature, nearly as constantly as a shadow, rising and falling, not with but after the temperature changes. In the month of September (following the most favorable temperature in July) the deaths reach the lowest point—an average of 232.4 per week. If the temperature had continued thus favorable throughout the period, it is reasonable to believe that the deaths for each month would have remained the same—an average of 232.4 per week, or 6,884.8 per year, amounting to 206,544 deaths during the period of thirty years. Deducting this number from the number of deaths which really occurred, 231,036, leaves 24,492 as the number of deaths indicated to have been produced by the temperature changes shown in the diagram. Had we records of the temperature, and of the deaths from phthisis for smaller divisions of time, for each day, for instance, it seems to me probable that the fluctuations of temperature would be seen to have sustained a causal relation to a large proportion of the deaths from phthisis, even in the most favorable month. Unfortunately, such perfect records are not available. But the material was originally compiled by weeks, and during the fourth week of September the deaths were only 130, or 2.4 less than the average for that month, apparently responding to a rise of temperature which occurred eight weeks before—the usual difference of time between the fluctuations of temperature and those of the deaths. Substituting this 130 (deaths) for the 132.4 used in the above calculations, gives 28,236 deaths as due to the *weekly* fluctuations of temperature, or 3,744 more than by the *monthly* records. If dividing the unit of comparison (one month) by 4 shows 3,744 more deaths produced by the fluctuations of temperature, what would dividing by 30, or a comparison of observations by days, show? We do not know absolutely; but by analogy we are led to believe that accurate records of the temperature and of the deaths from consumption would show that a large proportion of the *deaths* from phthisis were quantitatively related to atmospheric temperature.

Yet this relation would necessarily be obscured by the greater power possessed by some patients than by others to resist the inroads of consumption. For, on account of the varying duration of the disease, the deaths, instead of always occurring at the same interval after the exposure to the primary cause (cold and contagium), are scattered along according to the virulence of the contagium and the resisting power of the patient, thus grading down the elevations and filling up the depressions in the curve representing deaths from phthisis until it approximates a horizontal line showing only surface fluctuations corresponding with the temperature fluctuations.

The fact that the diseases of the lungs and air passages and the communicable diseases which enter by way of the air passages are later than the exposure to cold by a time equal to the average duration of the disease and the period of incubation, is shown by the diagrams which I present. Thus the maximum sickness from influenza, tonsillitis and croup is in the same month as the greatest exposure to cold, while pneumonia follows one month later, and, according to the most complete statistics, shown in Diagrams 10 and 22, the changes in the deaths from small-pox and consumption follow at a period of about two months after the temperature changes.

I believe that if the average duration of consumption was as uniform as is the average dura-

tion of small-pox, the proportion of the deaths which would be seen to be quantitatively related to the atmospheric temperature would be as great with consumption as with small-pox; and, as may be seen in Diagram No. 22, there were twice as many deaths from small-pox following the coldest season of the year as there were following the warmest season.

THE CAUSATION OF CONSUMPTION—SUMMARY.

In order that mankind shall be able to prevent or avoid the causes of consumption, it seems essential that its causation should be understood. It would seem that we are now in possession of sufficient knowledge of its causation so that, if we will but act upon that knowledge, a large proportion of the sickness and deaths from this most important of all diseases, may be prevented. What are the generalizations which supply the bases for effort for the prevention or avoidance of consumption? They seem to be about as follows:

1. Microscopic organisms called bacilli, of a species known as *bacillus tuberculosis* (Koch), accompany the disease commonly known as consumption.

2. Introduced into a *susceptible* organism, *bacillus tuberculosis* is able to reproduce, and, apparently, to cause and continue the condition known as consumption.

3. These bacilli are present in the sputa of consumptives; and, although outside the body at ordinary low temperatures they do not multiply by reproduction, they are not destroyed by drying, and, consequently, in apartments occupied by consumptives who do not take care to so dispose of the sputa that they shall not become a part of the dust of the room, the dust may contain the bacilli, or their spores. Because so large a proportion of people have consumption, the dust of halls and public places where sputa reach the floors and may become a part of the dust of the room, such dust may contain these bacilli, which are believed to be the *specific* cause of the disease.

4. The bacilli of consumption are introduced into the body in various ways; but, apparently, most frequently by way of the air-passages. (The order of the invasion of the lobes of the lungs is tolerably well understood.)

5. Statistics of sickness, and of deaths, collated with meteorological statistics, seem to prove that the consumptive processes go on most actively after times of low atmospheric temperature, and least actively after times of high atmospheric temperature. It would seem that atmospheric temperature is, directly or indirectly, a *controlling* cause of consumption.

6. Statistics of sickness and of death from consumption, collated with statistics of sickness and deaths from other diseases, prove that, in the long average, consumption is somewhat uniformly preceded in time and place (and inferentially in the same individual, by one of these diseases), by the irritative and exudative diseases of the lungs and air-passages, such diseases as influenza, tonsillitis, croup, bronchitis and pneumonia generally preceding, in the same locality, the occurrence of recognized consumption; they are, apparently, conditions antecedent to consumption.

7. Statistics of sickness and of deaths, collated with meteorological statistics (Seibert, Baker), prove that the irritative and exudative diseases of the lungs and air-passages follow uniformly and quantitatively, in their rise and fall, the fall and rise of the atmospheric temperature, indicating that, directly or indirectly, atmospheric temperature is a *controlling* cause of those diseases.

8. The accumulation of non-volatile salts (chlorides) in the sputa and solidified lung in pneumonia (Beale), coupled with the fact of the disappearance of the chlorides from the urine during the onward progress of pneumonia (Redtenbacher), collated with statistics of sickness, of deaths and of meteorological conditions, and with certain facts in physiology (Brücke and Hoppe), pathology (Stokvis), and chemistry, seem to prove that the control which atmospheric temperature has of pneumonia (and, if of pneumonia, also its control of all those irritative and exudative diseases of the lungs and air-passages, which it does control), is not direct, but indirect through its well-known control of the atmospheric humidity, and so of the quantity of water exhaled from the lungs and air-passages, influencing the quantity of non-volatile salts which may there accumulate.

9. Residence in low, wet localities tends toward the causation of consumption, and toward the fatality of the disease (Bowditch, Buchanan, Pepper, Trudeau), because in all such localities the atmosphere is cold, and consequently its absolute humidity is small. Other concomitant conditions may contribute — greater atmospheric pressure, greater daily range of pressure, greater daily range of temperature, more active oxidation, less tendency toward deoxidation than occurs under free exposure to sunlight, lack of sufficient nourishing food, etc.

10. Among causes known, or believed, to be *predisposing* to consumption, are: heredity; temperament (certain types of auburn-haired persons being supposed to be especially liable to consumption); narrow lymph-spaces in the connective tissue (Formad),[33] possibly because of their more readily clogging up by saline, albuminous or fibrinous exudations; and excess of such non-volatile salts as sodium chloride in the food or drink.

THE PREVENTION OF CONSUMPTION.

We come now to the most important utilitarian

[33] Jour. of Am. Med. Ass'n, Vol. 2, p. 148.

question connected with this subject,—What can be done to lessen the ravages of this most destructive disease?

It is gratifying to be able to say that, if we accept the evidence collected in this essay, much can be done; and that there is promise of the prevention of a very large proportion of the sickness and of the deaths from consumption, through the adoption of measures which are not difficult, yet which require, for their most speedy and complete accomplishment, such an amount of coöperation by all classes of people as can only be secured through the faithful labors of intelligent boards of health, or of some agency for the thorough dissemination of the truth respecting this disease and the means for its avoidance, restriction, prevention, and climatic and other treatment. It is still true as written in the Bible—"My people are destroyed for lack of knowledge."[34] When once the people know, fully, how and why consumption is caused, they will find and adopt rational methods of protection from that disease.

PREVENTIVE MEASURES.

1. Having in mind the foregoing generalizations, numbered 1, 2, 3, 4, relative to the supposed *specific* cause of consumption, it would seem to be practicable to so enforce, upon the minds of the people generally, the importance of the destruction or the disinfection of all sputa from consumptives, that the present very general distribution[35] of those microörganisms shall be very greatly lessened.

The consumptive might carry small pieces of cloth, each just large enough to properly receive one sputum, and paper envelopes or wrappers in which the cloth may be put as soon as once used, and with its envelope burned on the first opportunity.

2. What has been said about the destruction or disinfection of the sputa of consumptives should apply also to the dejecta; because it has been shown (by Friedländer[36]) that the bacilli are to be found in the urine of persons with tubercular disease of the urinary organs, and in the fæces of those with tubercular disease of the bowels, and they may be in the fæces of those who swallow sputa containing the bacilli, that is, possibly, of any consumptive.

Through better systems of ventilation, much may be done for the lessening the number of microörganisms inhaled with the dust of floors, carpets, etc.; especially by having the foul air exits at the floor-level, so that the general motion of the foul air shall be downwards, and not upwards into the nostrils of the inmates of the room. A more liberal supply of fresh air to all occupied apartments, especially public rooms, would lessen the danger of inhaling air which has already been breathed, and also of microörganisms, etc. So long as the specific cause of consumption is so widespread, lives may probably be saved by the use of respirators by those who sweep and dust rooms which consumptives have occupied.

3. Generalizations Nos. 5 and 7 make it important that consumptives, and persons susceptible to consumption, should especially guard against the inhalation of cold air. It enforces the importance of having such persons spend the winters in a climate warmer than that to which they have been accustomed.

4. Generalization No. 6, in connection with Nos. 1, 2, 3 and 4, teaches us that it is important that every person suffering from one of the irritative or exudative diseases of the lungs or air-passages, should be especially protected from the inhalation of the bacillus tuberculosis.

5. Generalization No. 8 enforces the importance of supplying moisture to all air which requires to be warmed, in hospitals, houses, public buildings, and wherever the temperature of the air can be controlled.

6. Generalizations Nos. 8 and 10 teach us that it may be of very great importance to see that our food and drink, especially in winter, shall not contain an excess of chloride of sodium or other non-volatile salt liable to be exuded into the air-cells or air-passages, and left there by unusual evaporation of vapor through the inhalation of cold air, which is necessarily dry, or of air which has been warmed without the addition of moisture.

6. Generalization No. 9 has been previously commented on, and some of the advice based upon it by Dr. Bowditch has been quoted. But his results have been so well upheld by Drs. Buchanan and Pepper, and by the experiments of Dr. Trudeau, that since we now think we know the reason why residence over low, wet soil endangers health and life from consumption, there should be no hesitation in acting in accordance with the laws laid down by Dr. Bowditch, relative to the avoidance of residence over low, wet soil, and in any cellar-like place.

8. In addition to what is generally known for the prevention of small-pox, diphtheria and scarlet fever, the facts incidentally set forth in this essay teach why it is that the inhalation of cold, dry air is an important factor in the causation of those diseases, and why it is even more important in winter than in summer to guard people from them.

9. Finally, there is given herein evidence as to the causation of a large class of ordinary diseases (of the lungs and air-passages), which should lead to the prevention of a very considerable proportion of the sickness and deaths therefrom.

That there shall be a very thorough dissemi-

[34] Hosea, Chapter IV, verse 6.

[35] Dr. James E. Reeves, ex-Pres. of the Am. Public Health Association, demonstrated the presence of innumerable tubercle bacilli in a sputum on the sidewalk, near the post office in Wheeling, W. Va. They are probably to be found on the sidewalk in every city.

[36] Manual of Microscopical Technology, pp. 219, 236, 237.

nation of the truth, or at least of the nearest approach to the truth that is now known, respecting these subjects which are of vital consequence to every man, woman and child, and that, through the attention to such subjects which shall result from such thorough dissemination, many valuable lives may be saved, and much suffering and sorrow may be prevented, is the earnest wish of the author of this essay.

PELVIC ABSCESS IN THE FEMALE.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY WILLIAM H. PARISH, M.D.,
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I use this term in its comprehensive and generic sense as indicating the location of pus within the pelvis, and I object to its limitation to pus within the extraperitoneal lamina of areolar tissue. I cannot appreciate the propriety of applying so comprehensive a term as pelvic abscess to an accumulation of pus in the pelvic areolar tissue, inasmuch as modern pathology teaches us that the latter condition is a rare one compared with the formation of pus in other locations within the pelvis. I shall not speak of abscesses within the sheath of the psoas or iliacus muscles, nor of perityphlitic abscess—for these conditions pertain more to general surgery and are common to both sexes. The rarer forms of uterine parenchymatous abscess and of intra-pelvic abscess arising from disease or injury of the pelvic bones I shall also pass by.

I will give three subdivisions of pelvic abscess in the female, namely, areolar abscess; intra-tubal and ovarian abscess; and intra-peritoneal abscess. To one or other of these subdivisions belong the very large majority of intra-pelvic pus formations.

Until recent years pelvic cellulitis was deemed of very frequent occurrence, and consequently abscesses of the pelvic areolar tissue was believed to be by far the most frequent form of abscess within the female pelvis. Modern abdominal surgery has, however, demonstrated the fallacy of such convictions, and it is now known that inflammation of the pelvic areolar tissue or pelvic cellulitis is of only occasional occurrence, and there cannot be a shadow of a doubt that very many cases formerly diagnosticated and treated as abscesses of the pelvic areolar tissue, were accumulations of pus, either within the Fallopian tube, the ovary, or the peritoneal cavity. In fact so much more frequently do the other forms of pelvic abscess occur, that to-day some busy operators would seem almost to doubt the occurrence of pus within the pelvic areolar tissue. But such a conclusion would be equally as erroneous as it was in the past to look upon areolar abscess as the ordinary if not the only form of intrapelvic pus formation.

I have seen a number of areolar abscesses; in some of these cases the location of the pus was demonstrated in an autopsy, in others by a laparotomy and subsequent extra-peritoneal operation, while in still other instances the history and progress of the case justified the diagnosis. This form of abscess is a result of acute areolar inflammation, and is usually a sequel to labor, but may arise because of traumatism of the cervix vagina or external genitals. Doubtless septic infection of the local lymphatics, or more rarely of the veins precedes the abscess. The local septic infection arises from a failure to preserve an aseptic condition of the parturient canal either during or subsequent to labor, or in connection with operations on the external genitals, the vagina or the uterus.

I have never met with an areolar abscess dependent upon extension of gonorrhœal inflammation from the vagina or uterus directly through the walls of those organs into the pelvic areolar tissue. However I am not prepared to deny the possibility of such an occurrence by means of the lymphatics in very rare instances. Suppuration of a pelvic gland may arise as a result of chancroids of the genitals, and a secondary areolar abscess may form, but this must be also of rare occurrence.

Areolar pelvic disease is not infrequently the result of a hæmatoma—the contents then consisting of pus intermixed with degenerated blood elements. Chronic pelvic cellulitis occurs only as a sequel to some of the complications of pelvic abscess. When fistulous tracts persist after the escape of pus into the intestinal canal, or into the bladder or in some other direction; or where degeneration and partial suppuration of a pelvic gland occurs, then pelvic cellulitis becomes chronic. But chronic cellulitis without such complication as a constant cause is a gynecological myth—and has existed only as an *ignis fatuus* in the brains of former members of our profession, or of those of to-day who hug the delusions of the past. The abdominal surgeon has demonstrated in innumerable instances that chronic cellulitis has no independent existence.

Intra-tubal and ovarian abscess frequently coexist. In fact, ovarian abscess when existing, is usually a sequel to and dependent upon tubal disease. They are closely related as to causation, course, prognosis and treatment. I have seen but one instance of an ovarian abscess without an associated pus formation in the tube. In making this statement I do not refer to suppurating ovarian cysts. Bernutz long ago described the disease of the uterine appendages, but it was the abdominal surgeon of recent days who demonstrated the frequency of such diseases and especially the frequency of occurrence of pyosalpynx. That

intratubal abscess occurs with very much greater frequency than areolar abscess, must be apparent to every one familiar with recent abdominal surgery. The enucleation and removal of a distended tube containing several ounces of pus from a mass of adherent viscera and inflammatory exudate with cure of the patient is a convincing argument that the most skeptical have not been able to resist. However there are instances in which the pus accumulation has become so large, and the alteration of the tube wall so great, and its blending with other viscera or tissues so intimate, that it is quite impossible for the operator to determine the starting point of suppuration without an extent of dissection incompatible with the possible safety of the patient.

The obscurity of the origin of such extensive pus formations is rendered greater by the fact that associated with pelvic areolar abscess may also coexist extensive plastic inflammation of the pelvic peritoneum. Upon this obscurity rests in part the difficulty of determining the relative frequency of areolar and tubal abscess. As in past years cases of tubal abscess were unwittingly called areolar abscess so, to-day, it would seem that areolar suppuration with adhesions is liable in some instances to be pronounced intratubal abscess even after the abdomen has been opened.

The term pyosalpynx is indicative of the location of the pus, but it does not convey an idea of the extent of inflammatory exudation and adhesion of viscera in which the pus tube becomes imbedded. After these adhesions have been established the amount of pus that forms in the tube is sometimes very great, amounting in rare instances to several pints. This large mass of inflammatory exudate and of viscera matted together with the enclosed pus accumulation is not properly designated by the term pyosalpynx. It is a form and the most frequent form of pelvic abscess.

Intratubal abscess is dependent in the large majority of cases on an extension of gonorrhœa into the tube. There may not be ascertainable a distinct history of gonorrhœa in the patient, but the confession of the husband usually will throw the necessary light on the causation. He will give a history of chronic gonorrhœa dating back sometimes several years to its acute origin.

The wife in most instances will state that she has not been well since her marriage, several months or several years previous, and she has been suffering with salpingitis and ovaritis prior to the accumulation of pus. This association, in nearly all cases, of pyosalpynx with a history of gonorrhœa would seem to point unmistakably to the causation. The discovery of the gonococcus removes all doubt as to the nature of the cause. In many cases the gonococcus has not been discovered and then only the history of the case can serve us in tracing the process to its origin.

When abscesses do not appear until months after the contraction of the gonorrhœa, there have arisen exciting and contributary causes. Among these may be mentioned exposure to wet and cold during the menstrual period, excessive venery, the introduction into the uterus of that much abused instrument the uterine sound, or of irritant applications or tents, operations on the cervix and as forcible stretching of the cervical canal, and the operation for closure of a lacerated cervix. In the latter operation, independent of sepsis, the too great closure of the canal, and the consequent interference with the proper drainage of the uterus, may constitute the contributary cause of the pyosalpynx. In cases of lingering gonorrhœal salpingitis, it requires but little additional irritation or mechanical disturbance of the uterus or of its appendages to awaken active suppuration within the tube, a leakage of the pus through the fimbriated extremity awakens a local peritonitis; adhesion and deposits of lymphs occur with prevention of further escape of pus, and then, if the uterine extremity becomes occluded by adhesion, an acumulation of pus arises and an intratubal abscess is established. That this form of abscess arises also from extension of septic infection from the uterus, seems generally accepted, but as is well known septic inflammations are not usually plastic in nature, and while septic salpingitis is not rare, yet the conditions are unfavorable for the formation of a tubal abscess, inasmuch as the patulency of the tube is more likely to become increased from relaxation of the tubal and uterine parenchyma than is occlusion of the extremities of the tube from adhesion or exudation. When the septic infection is intense, the patient succumbs in a few days; when it is slight, the patient usually recovers with crippled pelvic viscera, and without the formation of an abscess except in rare instances. After abortion the usual pelvic inflammation is that of septic salpingitis and ovaritis, yet my observations lead me to believe that intratubal abscess, dependent upon an abortion, is of infrequent occurrence. Still it occurs probably with greater frequency after abortion than does areolar abscess. The latter occurs more frequently than the intratubal variety, after labor at or near the full period. The frequent laceration of the cervix and vaginal vault during the latter labors opens the gateway to the infection of the lymphatics leading into the areolar tissue. In abortion the infection begins within the uterine cavity and the tube soon becomes involved.

If the cervix has suffered, as it may in criminal abortion, areolar abscess may arise, or in even non-criminal cases the uterine lymphatics may carry the infection directly into the connective tissue. In early pregnancy, however, the uterine lymphatics are not active, and infection travels then most rapidly among the tubes.

Of course septic salpingitis with possible subsequent abscesses may arise from the introduction of the dangerous uterine sound, or of the very rarely indicated and exceedingly dangerous uterine tent, or from operations on the cervix, vagina or the external genitals when a sepsis has not been preserved. It is to be remembered also that intratubal abscess occasionally develops in connection with tubercular and carcinomatous disease of the uterine appendages.

The successful treatment of pelvic abscess often demands an exercise of the most deliberate judgment and the highest operative skill. It is true that a considerable number of areolar abscesses result in cure by a spontaneous escape of the pus, chiefly into the vagina or into the rectum. But the frequency with which permanent fistulæ follow spontaneous evacuation is sufficiently great to render it unwarrantable to wait for such an event. The undoubted indication is to establish perfect drainage through either the vagina or the abdominal wall as soon as safely practicable. Perfect drainage will alone meet the surgical indication in such an abscess, but is it possible always to determine whether or not the pus is in the areolar tissue? Having the constitutional symptoms of an abscess, the location of the induration or of fluctuation may aid in the diagnosis. That is, the patient having constitutional evidence of suppuration, should fluctuation or induration exist in front of the bladder or in the iliac fossa, and not be present in the locality of the tubes and ovaries, an areolar abscess probably exists.

Again, in some rare instances the direction taken by the accumulating pus may aid in the diagnosis. I have diagnosticated pus in the areolar tissue by finding that the advancing swelling was extending upwards out of the pelvis, in a postero-lateral direction, *i. e.*, toward the kidneys following the abundant layer of connective tissue in that region. When the increase in size of the swelling is rapid, the probabilities are that the inflammatory process is in the areolar tissue. A prominence, or fluctuation to be detected in the vagina, does not throw light on the location of the pus unless it be in front of the bladder. When the origin and the progress of the case justifies the belief that pus has formed in the areolar tissue, an extraperitoneal incision is called for. I do not practice aspiration of a pelvic abscess of any variety as a remedial or curative measure. I dislike very much to resort to it for diagnostic purposes. It often leads to extension and aggravation of the inflammatory action. I would say that aspiration is very rarely justifiable.

In areolar abscess if there is bulging in the vagina, an opening should be made at that point. In opening through the vagina the median line posteriorly must be the elective point as laterally and anteriorly there is danger of wounding either the uterine artery, the urethra or the bladder. It is better to avoid the knife at least after passing through the mucous membrane. Thomas makes an incision through this membrane, then works the index finger through the deeper tissues until the pus cavity is reached. I have repeatedly, after making an incision through the mucous membrane, pushed into the abscess a blunt grooved director and dilated the opening by passing along the groove a strong pair of closed forceps, separating the blades on their withdrawal, after the manner of opening deep seated abscesses recommended by Mr. Hilton.

I have also found the plan practiced by Goodell an excellent one, namely to thrust a closed pair of scissors, not too pointed, and on withdrawing them to separate the blades. If the finger is introduced it will be found that when the pus is in the areolar tissue, there is, after its escape, considerable, if not complete, collapse of the abscess walls, and their inner surfaces are fibrillated, but if an intratubal abscess has been opened the interior will be smooth and there is less tendency for the walls to approach each other, the latter being prevented by reason of the dense peritubal adhesions. If the opening secured is sufficiently large, I syringe out gently the cavity with a solution of corrosive sublimate, one part to three thousand, and introduce a rubber drainage tube.

I have never opened into an abscess through the rectum. While it is true that many cases opening spontaneously *per rectum* recover promptly, yet always there is great danger that gas or fæcal matter will escape into the abscess cavity and establish a permanent fistulous tract. Even if the pus seems quite ready to escape into the rectum, I prefer to open through the vagina.

In many cases the suppuration begins in the areolar tissue so high up in the true or the false pelvis that an opening *per vaginam* is unsafe. Then an incision can be made through the abdominal walls, and usually with the most satisfactory result. The most favorable point in many instances will be above Poupart's ligament, along either its inner or its outer half, not extending the incision so as to endanger the deep epigastric artery, or the iliac vessels. The incision should be made early and carried, it may be, deep into the pelvis, until pus is reached, taking care to keep external to the peritoneum. An early incision can be made at this point and is peculiarly advantageous, for thus can be avoided the establishment of fistulous tracts and the serious crippling of the pelvic organs.

After irrigating the cavity I introduce preferably a large perforated rubber drainage tube. A few instances of perforation of the iliac artery, from ulceration caused by the tube have been reported. Even when the rubber tube is employed, one must remember that the large vessels are imbedded in the areolar tissue and the tube may

come in direct contact with them, unless special care is taken to prevent it.

When the abscess is of the intratubal variety drainage is not so safely secured, nor can a cure be expected from it. The early removal of the appendages after a median abdominal section is the only rational and reliable procedure. The most careful toilet of the peritoneum must be effected and in most instances the drainage tube is necessitated. Usually if the case is seen early the diagnosis is easy, yet in some cases the diagnosis is exceedingly difficult and may not be possible until after the abdomen has been opened.

In arriving at a diagnosis one is aided by a history of gonorrhœa in the husband, of dyspareunia on the part of the woman, and of recurring attacks of pelvic inflammation. The uterus is immobile and a mass rarely fluctuating is felt *per vaginam* to the side of or posterior to the uterus. In cases where suppuration has existed for several days or weeks an indurated mass as large as the closed fist, or larger, rises to the brim of the pelvis, or higher. Usually by this time involvement of the opposite side has occurred. The abscess increases in size less rapidly than the areolar variety and the pelvic viscera are immovably matted together. An incision in the linea alba is indicated and the surgical procedure frequently is of the most difficult and delicate character. Mr. Tait has taught the surgical world a most valuable lesson as to the manner of dealing with such abscesses and among us Drs. Joseph Price, W. G. Wylie and others have achieved results in this direction of which modern surgery may well be proud.

I shall not enter into the details of the operation of removal of a pyosalpynx from its abnormal and intricate environment. I have preferred in this paper to consider the principles involved rather than the surgical technique in detail. While removal of the appendages is the only rational surgical proceedure, there are still cases so long neglected and in which the complications are so grave and extensive and the patient is so exhausted that the immediate removal of the appendages would be attended with the greatest danger; and in a number of instances has eventuated fatally. In such neglected cases it may be the part of wisdom first to secure drainage through the vagina or the abdominal wall and to improve the general and local condition of the patient before attempting the radical operation. After drainage has been secured the adhesions and lymph deposits become absorbed to some extent and the patient regains her strength in part. Then the removal of the appendages can be effected with relative safety. Doubtless in some instances drainage alone has effected a cure in intratubal abscess. Prof. Reamy reported such a case at the last meeting of the American Gynecological Society; but such a result cannot be expected and will prove very exceptional.

In the attempt at drainage it must be remembered that intratubal abscesses are usually double —one in each tube—or even in the same tube there may exist two or more abscesses and the drainage may empty but one, Recurrence is the rule when merely drainage of the intratubal abscess has been attempted. Also inasmuch as, owing to adhesions, the walls of an intratubal abscess do not rapidly collapse, atmospheric air is drawn into the cavity during drainage and septic germs are peculiarly liable to enter.

In cases of doubt as to the location of the pus, exploratory laparotomy may be indicated, and if the pus is in the areolar tissue, a second and extraperitoneal incision is much better than to empty the abscess through the peritoneal cavity, and to stitch the abscess wall to the parietal wall as has been practiced by Mr. Tait. In a large number of pelvic abscesses on which I have operated I have seen but one in which such a procedure was the best one, and that single instance was an intratubal abscess of large size.

Even in the latter form of abscess the pus may sometimes be drained off as a palliative measure by an incision made, it may be made after a median section.

With two fingers in the peritoneal cavity, not only can the appendages and the pelvic cavity be explored, but one is greatly aided in locating the pus when it is in the areolar tissue, and in effecting safely an opening at the most favorable point.

The intraperitoneal variety of pelvic abscess is where the pus is within the pelvic peritoneal cavity and is not of frequent occurrence. It is an error in nomenclature to designate an intratubal abscess as an intraperitoneal abscess. An abscess actually within the peritoneal cavity is not of frequent occurrence. Yet we find it a result of inflammation following the leakage of a gonorrhœal tube, or of a septic tube as after delivery, or it may follow some surgical procedure about the genitals. Again it may arise from extension of inflammation along the lymphatics communicating with the peritoneum, or it may be the result of a foreign body such as a ligature left in the pelvic cavity. When the ligature is the cause of the abscess it is either because it was uncleau when introduced or was to much disturbed by the drainage tube, or it was too large, or was in close proximity to the rectum whence septic germs had migrated through the tissues. It is a difficult matter to differentiate this variety of abscess. We must be assisted largely by the history of the case. Laparotomy, evacuation of the pus and removal, if practicable, of the exciting cause are usually the indications, or in case of a ligature it may be fished out through the fistulous tract or it may escape spontaneously. The accumulation of pus within the peritoneum may be very large, the mass reaching as high as the diphragm and displacing the viscera in vari-

ous directions. In one case I removed through a median incision two gallons of pus, with recovery of the patient.

I cannot close this paper without urging the necessity of operating early in every variety of curable pelvic abscess.

The besetting sin of the family practitioner and of the timid and doubting operator is to wait. In this delay the dangers become cumulative, and the surgeon is asked to operate when the case is hopeless. If the patient dies, the general practitioner often is discouraged and in his next case, he waits still longer under the hope that pus may not form or that it may escape spontaneously. He has seen some instances in which he believed suppuration had occurred and yet resolution took place, and he has seen other instances in which after spontaneous evacuation recovery was rapid. So he justifies his delay and gynecology receives the unmerited obloquy attendant upon fatal results inasmuch as the conditions under which an operation is performed are rarely considered by the public or by the profession.

The formation of permanent fistulæ is usually an evidence of the lack of skill or courage on the part of the physician. The fistulous tracts constitute, it may be, indelible evidences of cowardice and inefficiency on the part of the medical attendant. Early surgical interference with the knife should be the inflexible rule in the treatment of all varieties of pelvic abscess.

MENTHOL IN LARYNGEAL PHTHISIS.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY CHARLES H. KNIGHT, M.D.,
OF NEW YORK CITY.

But few diseases appeal more keenly to our sympathy than laryngeal phthisis. Extreme pain in swallowing, racking cough and stridulous breathing combine with other symptoms so well known to form a most distressing spectacle. A glance at the long list of medicines and measures which have been, at various times, advocated in its treatment proves the earnestness of the search for a remedy. Experiments with new drugs and new methods have been eagerly undertaken and hopelessly abandoned, until at last the majority of practitioners have settled down to the conclusion that palliative agents are the only resource.

Of recent contributions lactic acid and menthol have, perhaps, attracted the most attention, in part because of the extraordinary claims made in their behalf. If the statements of Rosenberg,[1] the most ardent champion of menthol, are to be accepted, we have in that drug almost a specific in laryngeal phthisis. His views have been more or less corroborated by von Brunn, Beehag[2] and others. In nine out of fifty-seven cases treated by Rosenberg laryngeal ulcers healed, infiltration subsided and subjective symptoms disappeared in from one to four months. In all the cases in which the treatment was persevered with, twenty in number, there was marked improvement. His first successes have been confirmed in more recent cases, the total number now reaching nearly one hundred. Compared with lactic acid, the action of menthol is said to be slower but less painful. He claims to have demonstrated diminution, and, in some cases, disappearance of bacilli. He strongly insists upon the analgesic effect, and especially upon the antiparasitic properties of menthol. On the other hand, Fürbringer emphatically denies its germicidal power, at least so far as the bronchi and pulmonary tissues are concerned. Von Brunn[3] finds that menthol gives better results in patients of delicate habit and in those of nervous, irritable temperament; yet, even in the absence of laryngeal stenosis, and in spite of his success with lactic acid and menthol, he favors tracheotomy, with the idea of giving the larynx immunity from irritation and of preventing aspiration into the bronchi and lungs of laryngeal secretions laden with bacilli. In taking this position he might fairly be suspected of lack of confidence in local applications.

Menthol has been employed in the larynx in several ways. An apparatus has been devised by Dr. Howard Smith[4] especially for spraying hot vaseline in conjunction with menthol, iodoform, or oil of eucalyptus. He uses the spray through the nostrils, and lays unnecessary stress upon the importance of having the fluid *hot*. At first I used it dissolved in olive oil, as suggested by Rosenberg. Lately a solution in fluid albolene, in the proportion of a drachm or a drachm and a half to the ounce, has been found more agreeable. Even with the weaker solution a good deal of irritation and cough is sometimes excited, while some cases bear the stronger solution without much complaint. Patients were directed to inhale ten or twelve drops of the solution from the surface of steaming hot water, or a few drops were thrown over the ulcerated surface with a laryngeal spray or syringe, or the application was made directly with a pledget of cotton. The easiest and perhaps the most effective way was found to be by inhalation for a few minutes every half hour from a nebulizer or vaporizer. The medicated vapor no doubt reaches the bronchi as well as the larynx, and is probably deposited on the mucous membrane of the entire air tract, provided the patient is directed to hold the breath for a few moments after taking an inspiration.

[1] Therap. Monatshefte, H. 7 and 8, 1888; also, Deutsche Med Wochnschr., 1887. p. 338.
[2] Edinb. Med. Journ., Jan., 1888, p. 625.
[3] Deutsche Med. Wochnschr., 1887, p. 304.
[4] Journ. Am. Med. Ass'n, Sept. 22, 1888, p. 410.

In every case of application with the syringe or brush, cocaine in 10 per cent. solution was first sprayed into the larynx. In only a very small proportion of cases was menthol the sole reliance. Cod liver oil, the hypophosphites, arsenic and iron were used according to indications. In several cases of extensive ulceration and of perichondritis cocaine was sprayed into the fauces to facilitate deglutition, and in some cases morphine was resorted to for the relief of cough. I have never used menthol internally. Rosenberg himself admits that no effect upon the bacilli was seen to follow its internal use, although appetite improved and secretion diminished.

My observations, which have been purely clinical, cover a series of twenty cases treated with menthol in the last two years. No note has been made of the presence of the tubercle bacillus. The diagnosis in each case rested solely on the gross appearance of the laryngeal lesion, confirmed by general symptoms and the existence of well-marked pulmonary disease. Five of these cases were watched to a fatal issue and six are still under observation. In four there was at the outset no laryngeal ulceration. Six were females. The ages ranged from 21 to 39 years. In two cases there was a family history of cancer, and in only three was there a distinct history of death in the immediate family from phthisis. Brief notes of the history of a single case may be of interest as illustrating the results with lactic acid and with menthol.

The patient was an elevated railroad conductor, 37 years old, whose mother died at middle life with some chronic pulmonary disease, probably phthisis, and whose younger brother undoubtedly has pulmonary phthisis. He first came to me for treatment in December, 1886, complaining of the usual symptoms of tuberculosis. He had the appearance and gave the history of a tubercular subject. He had a small cavity at his left apex and a patch of consolidation at his right apex. The larynx presented the characteristics of tuberculosis and an ulcer occupied the posterior commissure, whence it invaded to a slight extent the posterior extremity of the left ventricular band. The vocal bands were intact but very hyperæmic and much impeded in their movements. Lactic acid in 50 per cent. solution was applied on a laryngeal probe tipped with absorbent cotton. Six applications were made at intervals of a week and marked improvement in all respects ensued, the patient at the same time taking cod liver oil and the hypophosphites. Five months later two more applications of the pure acid were made. The patient then went to live in the country for the summer. In September, 1887, he came to me, saying that he felt so well that he intended to resume his occupation. The laryngeal ulcer had apparently healed, with some loss of tissue, but the arytenoids were still somewhat swollen and the larynx was highly congested. There had been no marked change in the condition of the lungs, but the general condition was certainly much better. In spite of my warnings he did attempt to work, and I did not see him again until March, 1888, when he presented himself in a most pitiable condition. All his subjective symptoms were much aggravated. The pulmonary lesion had considerably extended, there had been great loss of flesh, he was hardly able to walk, and could not speak above a whisper. On looking at the larynx it seemed as though no part of its posterior wall were free from ulceration. The arytenoids were enormously swollen and œdematous, and the vocal bands, which were exposed by deep ulceration of the ventricular bands, were thickened, eroded and almost immovable. Under the circumstances it did not seem justifiable to resort to lactic acid, and he was therefore put upon menthol inhalations combined with general tonic and stimulating treatment. His recuperative power was surprising, and for several weeks he seemed to make headway. The laryngeal ulcer became cleaner, the secretion was less abundant and more easily expelled, his appetite improved, although swallowing had to be made easy by the habitual use of cocaine, and signs of better nutrition were evident. Toward the end of summer, however, he again began to fail, although his larynx remained about the same. He began to have extreme odynphagia, which neither morphine nor cocaine would relieve. The prone position in taking fluids, as suggested by Wolfenden, was tried without success. The pain in swallowing finally became so great that he could not eat, and death occurred in November, 1888. This case seems to be especially instructive. In the beginning of treatment the lung affection was so limited and the general condition was so good that spontaneous healing of the laryngeal ulceration might have taken place under tonics and good hygiene. Probably the lactic acid applications hastened the reparative process. When the use of menthol was instituted all the conditions were extremely unfavorable; yet the laryngeal lesion, for a time, assumed a healthier aspect, and there was temporary amelioration of all the subjective symptoms.

There is no question whatever that tubercular ulcers of the larynx may cicatrize[5] under proper treatment and conditions; but it cannot be maintained that tuberculosis is thus cured. We may admit that tuberculosis begins as a local disease, and that primary laryngeal tuberculosis is possible.[6] In such case healing of the laryngeal lesion means prevention of general tuberculosis. When infection of the system has already taken place

[5] See article by Sokolowski, of Warsaw, in Wiener Klin. Wochnschr., Jan. 24, 1889, p. 66.

[6] See paper by Dr. John Sezdiak in the Journal of Laryngology and Rhinology, June, 1889.

the cure of an ulcer of the larynx merely relieves an harassing symptom, and that, unfortunately, only for a time, since it is a clinical fact that the cicatrices of laryngeal ulcers in tubercular subjects are prone to break down and the ulcerative process again becomes active. In menthol we seem to have a drug which has a peculiar sedative effect in tubercular laryngitis. To most patients it is soothing and grateful. Under its influence hyperæmia is diminished and secretion is lessened. In some cases cough and dysphagia are relieved. It may encourage a tendency to cicatrization, which is now and then witnessed in tubercular ulcers of the larynx even without special treatment. It is not unusual to observe displacement of a sloughy surface by apparently healthy granulations, and an attempt at repair begins. I have not seen a well defined tubercular ulcer of the larynx completely heal under its use, although, in many instances, superficial erosions, "catarrhal ulcers,"[7] perhaps due to irritation from cough and perverted secretion, have disappeared.

In conclusion, it would seem that we are not yet forced to adopt the discouraging opinion held by Massei[8], of Naples, that "we are still in want of some remedy or remedies to effect the cure of laryngeal phthisis." The beneficial effects of menthol are obvious, and in propitious cases a cure is feasible; yet the extreme claims of its warmest defenders should be accepted with some reservation. Three points suggest themselves for our consideration:

1. Spontaneous cure of a tubercular ulcer of the larynx may occur.

2. A simple erosion or ulceration may be mistaken for a tubercular ulcer.

3. The best results from local treatment of the larynx may be expected in cases of incipient or limited pulmonary disease, and in primary laryngeal tuberculosis.

No. 20 W. Thirty-first street.

THE CLINIC.

SURGICAL CLINIC AT THE HARLEM HOSPITAL, NEW YORK, DECEMBER 13, 1889.

BY THOMAS H. MANLEY, A.M., M.D.,
OF NEW YORK.
[Reported for THE JOURNAL.]

Gentlemen:—The first case presented for operation is one of strangulated inguinal hernia. The patient, a young man of 24 years, gives a history of having first noticed a swelling on the left side when he was 6 or 7 years old. He wore a truss thereafter almost continuously, until two years ago, when he found that, after leaving it aside, the hernia did not reappear.

The features in the clinical history to which we wish to particularly direct attention are, first, the origin of the trouble. The patient was only cognizant of the existence of the hernia when he was 7 years old. The protrusion may not, indeed, have attained sufficient volume to attract notice till this age, but it is pretty certain that the lesion was of congenital origin, as are the vast majority of all herniæ.

Next, the patient, supposing himself cured, discarded the truss for two years, and it was only when he made a severe strain, that he found his rupture returning. Now for the first time we find that, after many patient and persevering efforts, the patient cannot return the hernia.

It came down at about 3 in the afternoon. At 5 P.M. a local practitioner was called, who also failed to reduce it. Constitutional symptoms having developed, the patient was advised to seek admission to hospital. The great pain at the seat of the protrusion, which is very large, with the constant vomiting, and great exhaustion, all point to strangulation. In the treatment of this case we have two objects in view. The first and most important one is to release the obstruction, cut down and divide the constricting band, wherever it may be located; and then go on, and complete an operation which has for its object the radical cure of the hernia.

And here, we must notice the defective structural development, the deranged and confused anatomical position of the parts, before we can decide on the precise surgical measures which may prove most efficient in securing a cure.

Does the fœtal type still persist?

Is there an undescended testis, or one lying somewhere along the inguinal canal; or, if it has descended from this position, has it contracted adhesions with the floating viscera of the abdomen, and carried a portion of them to the base of the scrotum?

Is the fault due to a lavish, a morbid supply of omentum, or an abnormally long mesenteric ligament?

The operation is begun by the long, free incision. In going down deeply, it is at once manifest that it is a case of the congenital variety. We find no true sac; the immense mass of extruded omentum lies in snug apposition with the tunica albuginea, of the testis, but not adherent to it.

Finding the condition of things unfavorable, we shall not be able to do the classic operation of McBurney, which we have hitherto performed with most gratifying results in strangulated hernia.

We shall make a sort of modified McEwen operation, what might be designated perhaps as a "McBurney–McEwen operation;" *i. e.*, hav-

[7] See Gouguenheim and Tissier, "Phthisie Laryngée," Paris, 1889.
[8] The Journal of Laryngology and Rhinology, vol. i, 1887, p. 164.

ing no sac to ligate, without sacrificing the testes, we shall be obliged to protect the one remaining—really the sheath of the spermatic cord—and at the same time fill in, and obliterate, the greatly enlarged space between the pillars of the ring. In order to do this, after ligating and cutting away the superfluous omentum, we fix the remaining stalk in the canal with the quilled suture, after the plan of McEwen, while the remainder of the operation is completed after the plan of McBurney. The cutaneous surfaces of the wound are sewed down to the peritoneum, and the whole treated by the open method.

The second case for operation is another hernia.

The patient, a boy of 7, has had this hernia (left) since birth. His father had him carried to divers traveling charlatans during the first few years of his life, but latterly has consulted with several well known surgeons regarding him. There has been a great difference of opinion as to what the swelling really was, and the plan of treatment; some maintaining that it was a hydrocele, or an encysted spermatocele, etc.; some recommended operation, and others frowned at the very idea of it.

There are a few points unmistakably clear, in connection with this case.

The first; that there was a protrusion, that went on increasing with the boy's growth, and that it could not be reduced. Further, it is growing so rapidly and becoming so prominent under the trousers, as to attract notice, and hence is bringing down on the lad the jeers and banter of other boys, so that the little fellow, himself, is anxious to get rid of it.

Thorough antisepsis being maintained, the operation is commenced by making the usual long, free incision over the line of the spermatic cord, from the internal ring downwards. Here, as in the preceding case, there is no sac; and we proceed to freely lay open the tunica vaginalis which invests the protruded mass, and cannot be sent back to the abdomen by ordinary taxis. The enlargement consisted of nearly 12 inches of intestine. We find on careful examination, that the reason the gut failed to return was not resistance from above, but because, on its mesenteric border, the vas deferens, the epididymis and testis are in one confused mass, all bound rigidly to the intestine by well organized fibrous tissue, which must be divided with the scissors.

After thoroughly freeing the bowel, the atrophied testis is removed, high up, the gut itself returned, and the peritoneal cavity closed by ligating the fascia propria, on a level with the internal ring. The wound is to be treated by the open plan.

We next exhibit a man of 73 years, on whom we operated successfully two months ago. The man had a large incarcerated hernia on each side, which he said had annoyed him for more than forty years. At first they were readily reducible, but owing to badly fitting trusses, a localized peritonitis developed, which ended in the firm adhesion of the sac with its contents, and the production of the condition which is usually observed after a sufficient lapse of time, *i. e.*, an incarcerated hernia.

The great difference in age should be noted in these two cases; but neither extreme constitutes an obstacle to operative measures, when the patient is in sound health; indeed, in congenital hernia we would advise the operation at the earliest possible date, preferably before the infant is a month old.

P. S. Both cases made excellent recoveries, and were dismissed from the hospital, cured, six weeks later.

MEDICAL PROGRESS.

PATHOGENIC PROPERTIES OF MICROBES IN THE INTERIOR OF MALIGNANT TUMORS.—PROF. A. VERNEUIL (*Rev. de Chir.*), after a long and careful study of the pathogenic properties of microbes found within malignant tumors, concludes that they modify the nutrition of neoplasms, accelerate their growth, render cell proliferation more active, and are notably the chief agents of ulceration and softening, the exact causes of which still remain obscure; that they possess special pathogenic properties, by virtue of which they affect the ecomomy in some cases like septic poisons. Prof. Verneuil summarizes his further observations as follows:

1. The tissue of malignant neoplasm (cancers sarcomata epitheliomata, etc.) may be invaded at a given time by various microbes whose origin, character and numbers cannot be definitely ascertained.

2. This invasion, the causes and mechanism of which are equally unknown, may remain latent for a longer or shorter time; but in some cases it may also lead to various modifications in the evolution and nutrition of tumors, among others to rapid growth, softening and ulceration.

3. Microbes are not found in all kinds of neoplasms, nor in all neoplasms of the same kind, nor even in all parts of a single neoplasm that has been invaded. They are not found, for example, in lipomata, pure fibromata, sarcomata, or commencing cancers of slow growth, in an unformed condition and covered by healthy skin; on the contrary, they are found almost constantly in softened and ulcerated neoplasms.

4. These microbes, besides the irritating and inflammatory action which they exercise locally upon the tissue of the tumor invaded, possess other pathogenic properties of importance to the entire ecomomy. Furthermore, in all probability

they are capable of lighting up a more or less intense and irregular fever while they are still enclosed in a tumor which is in the process of rapid growth or softening. Again, during the removal of a tumor containing them they may be mixed with the fluids of the softened parts of the tumor, and thus, spreading upon the field of operation, they may contaminate it, infect it, and inoculate it in such manner as to provoke the development of a dangerous septic fever.

5. Recognition of this last fact argues in favor of the early removal of malignant neoplasms, so desirable from every point of view, and points out to surgeons certain preventive measures to be observed during and after the extirpation of tumors infected by microbes.

Treatment of Diphtheria.—Dr. A. Turilazzi (reported in *Wiener Med. Woch.*) employs a sublimate solution, for local application in diphtheria, of the following strength:

℞ Sublimate 0.30 grm.
Alcoholis conc. e. s. ad solut. exact.
Adde glycerinæ 15.0 ccm.
Filtra per cartam.
S. To be applied with a pencil.

The reporter has never observed the slightest symptom of intolerance of this solution. It is thoroughly applied to all parts covered by the membranes from seven to ten times in succession, the pencil being cleansed each time. The applications are made twice a day in light cases, and from three to four times a day in the severe ones. In this manner the reporter has treated 182 cases of diphtheria, with only nine deaths, while a colleague, at his recommendation, has treated 87 cases, with three deaths. This gives a total mortality of the cases thus treated amounting to only 4.09 per cent. Especially notable in this treatment is the diminution in the duration of the disease, which seldom exceeded eight days, and never fifteen.

The Prevention of Tuberculosis.—In discussing, at the French Academy of Medicine, the instructions relating to the prevention of tuberculosis which emanated from the Congress of Tuberculosis, M. Leroy de Méricourt said he feared that the divulgence of the dangers of contagion would terrify the public, and that the unfortunate victims of the disease might therefore be abandoned like lepers; he felt the more alarmed because he was not thoroughly convinced of the dangers of contagion; he was not acquainted with a single clinical case where phthisis had been communicated by contagion; he was unaware of a single case of contamination from meat; he believed that the specific bacilli had not been found in milk, and therefore it was unnecessary that warm milk should be abandoned for the less agreeable and less digestible boiled article, and that rare beefsteak should give way to meats impaired by too prolonged cooking. He believed that it would be impossible to carry out the practical execution of the recommendations contained in the instructions.

M. Trasbot, like the previous speaker, had never observed the transmission of tuberculosis from animals to man. Tuberculosis, he said, is becoming less and less frequent among cattle, and the cows of the Paris dairies are in excellent condition.

M. Nocard called the attention of the other speakers to facts proving the contagious character of tuberculosis. But it remained for M. Cornil to properly dispose of the question. He cited clinical facts demonstrating contagion from man to man; he also reported the importation of the disease from phthisical subjects in countries where it had hitherto been unknown. It was thus that the Fuegans first became affected with tuberculosis, which was brought to Terra del Fuego by a clergyman's family. The wife of the clergyman was a consumptive; she founded a school, and after a time the young Fuegans, her pupils, were decimated by acute phthisis, ; thus their teacher brought them at once the Word of God and the bacillus of Koch. M. Cornil has frequently found the bacillus in milk.

All these facts authorize the declarations contained in the instructions. As for the fear of injuring the sick by revealing the dangers of contact with them, it is entirely illusory. Numerous other diseases are regarded as contagious, but their victims are not left without resource on that account.

As for the rest, the Academy may authorize the publication of the instructions or not, the moral effect will be neither increased nor diminished, the entire press having already made every variety of comment regarding the instructions of the Congress of Tuberculosis.—*La Prov. Méd.*

Fifty Cases of Carcinoma Mammæ.—Dr. E. Brian reports fifty cases of carcinoma mammæ operated on by Prof. Courvoisier. The writer directs attention to the fact that whereas in 1869 Busch was acquainted with only a single case in which there was no return of the disease eight years after the operation, the statistics of recent times show from 4.7 per cent. to 30 per cent. of definite cures. Of Courvoisier's fifty cases all but one occurred in women; if we subtract from these six inoperable cases, three cases in which there was freedom from a return of the disease but death from other causes, three cases in which there was immediate death from the operation, etc., there will remain thirty-five cases of operation with eleven definitive recoveries, in so far as this term may be applied to observations extending over a period of from three and one-half to nine and one-half years. This gives a percentage of recovery amounting to 31.42, or, taking

the fifteen other cases into consideration, 23.9. Such figures forbid the expectant treatment of mammary carcinoma. One case is particularly noteworthy in which, upon the second return of the disease in the axillary glands, the patient was operated upon and has remained healthy for nine years.

The reporter gives the following among the predisposing causes of the disease: Sex; age, the highest percentage being reached at the maturity of womanhood with a maximum at the climacteric; frequent childbearing, lactation, mastitis, local irritation, trauma; hereditary influences (recognized in one-eighth of Courvoisier's cases).

In this series of cases it was observed that mammary cancers in general tend to extend outward toward the surface with ulceration or fixation of the skin before they extend to the subjacent tissues; when they extend in the latter direction immobility of the breast becomes a prominent symptom.

The principles according to which Courvoisier proceeds are as follows:

1. The entire mammary gland must be removed together with a liberal amount of integument.

2. At the slightest suspicion the axilla must be cleared out.

3. When it is necessary to clear out the axilla the operation must be begun in this locality and completed by subsequent removal of the breast. In this wise the severest portion of the operation is first completed and one avoids the danger of double hæmorrhage from the axillary vessels, and at the same time lessens the danger of infection through the lymph channels.

The operator calls attention to the malignancy of carcinoma of the breast in men, and to the loss of two of his patients from septic processes which he attributed to the use of juniper catgut. —*Corres.-Bl. für Sch. Aerzte.*

EXPERIMENTAL INOCULATION OF CANCER IN RATS.—HANAU, of Zurich, reports experiments in the inoculation of rats from a cutaneous cancer obtained from a rat. He transplanted small pieces of a vulvar cancer with ganglionic metastasis in the scrotum of old rats. One of these died in seven weeks from a diffused peritoneal cancer; the other was killed at the end of eight weeks and exhibited two cancerous nodules situated in the tail of the epididymus. A small fragment of this was inoculated in a third rat and an autopsy made three months later showed a diffuse cancer of the scrotum, with involvement of the peritoneum. In all these cases the diagnosis of carcinoma was established by careful histological examination, which also demonstrated the corneous character of the cancer.

The reporter ignores the failure of inoculation under the following conditions: Subcutaneous implantation in the place of transplantation upon serous surfaces, traumatic suppuration, and finally the employment of fragments taken from the human subject, or inoculation of animals of different species and very young animals.—*Rev. de Chir.*

TREATMENT OF ŒSOPHAGEAL STRICTURE.—What is the best method of treating stricture of the œsophagus? M. Nicaise advises early gastrostomy for cancerous strictures; M. Kirmisson, the prolonged use of the rubber sound; M. Le Dentu, for cicatricial strictures, internal œsophagotomy with an apparatus with blades of increasing size, analogous to the maisonneure urethrotome. Prof. Le Fort, in his report to the Academy upon these three methods, expresses his preference for progressive dilatation in cicatricial strictures, and the prolonged use of the sound, to gastrostomy, which, according to the statistics of Zesas, has given 111 deaths in 129 cases of cancer.

QUININE AND SULPHUR IN DIPHTHERIA.—DR. JOSEPH BURGHARDT (*Wiener Med. Woch.*) recommends the use of quinine and sulphur by insufflation in the treatment of diphtheria. He uses the sulphur lotum and sulphate of quinia in equal parts. Since using this combination he has treated thirty-three cases of diphtheria occurring in patients of all ages, and the results have left nothing to be desired; whereas, before adopting his present method of treatment, he lost one case in every three or four.

A CURE PRODUCED BY ARSENICAL POISONING.—CARL STADLER reports the case of a child 2½ years old that was severely poisoned by swallowing a rat powder containing arsenic. The child was saved by energetic treatment and in eight days was well again. The remarkable part of the case was that the child, which had been backward in its mental development and at 2 years of age could pronounce only a single word, all at once exhibited marked intellectual improvement, making rapid progress from day to day; furthermore, incontinence of the bladder and bowels which had so far resisted all attempts at a cure suddenly disappeared. Stadler is convinced that the sudden mental improvement is entirely attributable to the beneficent action of the arsenic, and he therefore advises the employment of this remedy in moderate doses in cases where anomalies of brain and nerve function are exhibited and where a nervine is indicated to increase the energy of innervation.—*Wiener Med. Woch.*

THE CHRIST HOSPITAL OF JERSEY CITY.—A new hospital at Jersey City has been dedicated, under the auspices of the Episcopal Church, and will be known as the Christ Hospital of that city.

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SATURDAY, JANUARY 18, 1890.

ALBUMEN, ITS DECOMPOSITION PRODUCTS, AND THEIR RELATION TO HEALTH AND DISEASE.

In the mineral world, certain fixed and definite laws have been determined governing the splitting up of complex chemical molecules into simpler ones. Similarity of ultimate composition, for example, determining the lines of cleavage in certain crystalline groups; or the simpler molecules resulting from the application of such decomposing influences as heat, pressure, light, or electricity to more complex ones. Again, similarity of chemical constitution determines the physiological action.

So too, in the organic chemical world, we begin to perceive that the same or similar laws govern the changes taking place in the far more complex molecules here met with. True, we are simply on the threshold of a correct knowledge of these far more difficult questions; yet such are the advances already made we may, with the aid of *a priori* reasoning, throw much light on one of the darkest and most difficult questions of physiological and pathological medicine. Which question once answered, will mark an advance, excelling in grandeur (though dependent in part upon it) that which marks the era of exact science of bacteriology. Dependent upon it—because without the stimulus which this induced to explain the action of pathogenic bacteria on the human organism—many of the decomposition products now familiar to us, would have remained hidden in the chemical lumber-room; and the influence of those known long before they were suspected of being of bacterial origin, would have never been studied.

Albumen, usually looked upon as a single complex molecule, is worthy the utmost interest as regards its decomposition products; since it is not simply as albumen *per se*, it is useful to the organism, but as a source of numerous decomposition products of the greatest importance to understand.

In beginning we stated that chemical molecules undergo certain definite decompositions in accord with the influences to which they are subjected: *i. e.*, they possess lines along which decompositions easiest occur; while the very act of splitting, without further chemical change, liberates in some such form as *heat* or *motion* that latent energy which held the molecule intact.

The molecule under consideration, from whatever source it may be derived, fish, flesh, or fowl, gives certain characteristics to its decomposition products, to this extent, that the lines of decomposition are such that at least three distinct series of chemical bodies are formed which have at their respective heads for their simplest homologues:

1. An acid—(HCN) prussic acid.

2. An intermediated aromatic body like (C_6H_5-(OH)) phenol, indol, skatol, and finally,

3. An alkaline or basic body constituted like (NH_3) ammonia.

In brief, an acid series; an alkaline or basic series; and a neutral aromatic series. *Possibly* derived from some of the vegetal albumenoids, we have an example which seems to illustrate to some extent these series in the decomposition of the only well-known *nitrogen-containing* glucoside, amygdalin, thus: (Amygdalin) plus (water) equals (prussic ac.) (oil almonds, am.) (glucose) $C_{20}H_{27}NO_{11} + H_2O = (HCN) + C_7H_5OH + C_6H_{12}O_6$. SEEGEN has shown that glucose may be derived from albumenoids.

So in the few decomposition products of albumen that have already been studied we find the various series appropriately illustrated thus:

Acid Series. — $C_5H_5N_5$ = adenin; $C_5H_5N_5O$ = guanine; $C_5H_4N_4O$ = xanthin $C_5H_4N_4O_3$ = hypoxanthin; $C_5H_4N_4O_3$ = uric acid; and many others illustrating continuous oxidation.

Aromatic Series.—C_6H_5OH = phenol; (1) C_8H_7N = indol; (2) C_8H_7NO = oxindol; C_9H_9N = skatol; (3) $C_8H_7NO_2$ = dioxindol; (4) $C_9H_9NO_2$ = isatin; $C_{26}H_{43}OH$ = cholesterin; (5) $C_{16}H_{10}N_2O$ = indigo; and many more. Significant too, that

many of these are to be found in the vegetable world, probably as leucomaines.

Basic Series.—$C_4H_9N_3O_2$ = creatin; $C_4H_7N_3O$ = creatinin; $C_9H_{19}N_3O_4$=amphicreatin; also CH_5N = methylamin; C_2H_7N=dimethylamine; C_3H_9N =trimethylamine; $C_5H_{11}N$=tetanotoxin; $C_5H_{14}N$ = cadaverin; $C_5H_{15}NO_2$ = choline; $C_7H_{17}NO_2$ = typhotoxin.

In order to give a clearer comprehension, definition of certain terms now met with in articles on this subject seems here appropriate.

Alkaloids, whether of animal, vegetable or putrefactive origin, consist of single or compound molecules of ammonia NH_3; $N\left\{\begin{matrix}H\\H\\H\end{matrix}\right.$ in which some of the "H" atoms have been replaced by one or more organic molecules thus: $N\left\{\begin{matrix}CH\\H\\H\end{matrix}\right.$ and $N\left\{\begin{matrix}CH_3\\CH_3\\CH_3\end{matrix}\right.$ methylamine and trimethylamine, and having been derived from the volatile alkali "ammonia" they still possess the chemical properties which characterized the parent nucleus, hence are basic, turn litmus blue, and are capable of forming salts with acids, and are volatile. When it happens that there is a molecule of "O" in the radical which replaces the "H" of the ammonia nucleus the resulting alkaloid is *non-volatile*.

When GAUTIER began to investigate the decomposition products of albumenoids in the human economy he found certain alkaloidal bodies always present, and as their source was in albumen, he proposed the term leucomaines, from the Greek root which signifies white of egg. As he began to find that they were not simply confined to the animal economy, but were to be found in the vegetable world also, it became necessary to differentiate and limit the term; so that at present it is used to classify those alkaloids which are found in healthy tissues, and are thought to be formed from the indirect (peptic or pancreatic) or direct action of the differing cellular elements constituting the human organism, while the term "ptomaines" is applied to those resulting from the vital processes of microörganisms and their digestive ferments, it is as easily conceivable that they must secrete such, since their stomach or medium of absorption and digestion is on their exterior, as it is to understand the exudate of pepsin and pancreatin from somewhat larger cellular elements of the stomach or pancreas.

As attention was first called to them by Selmi (recently deceased), who found them complicating his toxicological analyses, Brieger urges that the term be retained to denote those cadaveric alkaloids which are only slightly or non-toxic, while the term "toxines" be applied to those found to be decidedly toxic.

BRIEGER says: "According to the standpoint of the practical physician, based on the broad foundations of a definite physiology, all known diseases are divided into, 1, those of a traumatic origin; 2, infectious; 3, metabolic diseases; and 4, neuroses—the last two of which are experiencing an ever narrowing boundary in favor of the infectious group.

"Bacterial chemistry must take a place in the foreground in the clinical understanding of infectious diseases, since the mechanical spreading, as well as deoxidizing and albumen robbing power of the bacteria is not sufficient explanation of the disease symptoms. As living organisms, the bacteria must seize from their surroundings for the construction of their bodies, then throwing off the utilized material, as effete matter, it remains in their immediate neighborhood or enters the general circulation. These can only rivet the attention through the assistance of exact chemistry."

Out of the chaos of waste products there have been extracted and studied a long list of bodies, phenol, indol, cresol and skatol in the aromatic series, creatin in the basic and uric acid in the acid series serving as mere examples.

Even in the very first change from albumens to peptones we experience an alteration from innocent to toxic bodies, as has been demonstrated by the hypodermic injection of the digestion leucomaine of fibrine by pepsin. This is practically demonstrated too frequently, after the too hearty meal, when it happens that the normal capacity of the liver to store them is exceeded, and they escape into the general circulation, producing their characteristic symptoms of somnolence, lassitude and even stupor. We say escape the liver, for a fortunate provision of nature is that which prevents the too rapid entrance into the blood of ptomaines, toxine and leucomaines by colligating them with the sulphuric radical as Baumann has shown, and when this is exhausted then with glycosuric acid, as Schmiedeberg has demonstrated. Both being functions of the liver, and in both cases they are

converted into non-toxic or insolnble bodies, and therefore innocent. Nor is this only true of the toxines, but similarly true of the medicinal alkaloids like morphia, etc., and explains the cumulative effect in that organ and induces the toxicologist to search there primarily for his poisons.

Certain poisons escape that organ which do not belong to this class (*e. g.* digitalin), and float along to be taken care of by the pancreas, which has been demonstrated to be the organ which takes care of the excess of glucoses with its congeners, while disorders of which organ explains the eccentric form of diabetes. Light here again is thrown on the disposition of the aromatic poisons, which, like phenol, when conjugated with the sulphuric radical, are rendered harmless while still antiseptic, and are excreted through the kidneys in that combination, thus medicating the urine. In like manner other members of that group, indol and skatol, which are always to be found in the waste products of the microörganisms continually present in the intestinal tract, and, as such, are similarly disposed of. Hence, when these fermentations go on to an excessive extent, as in intestinal obstruction, or where the powers of life become impaired, as in diphtheria, scarlet fever or pyæmia, the safeguards, sulphuric and glycosuric acids, are exhausted, and in the urine large amounts of the aromatics appear and form the basis for Rosenbach's test for the benzol derivatives.

Brieger, who deserves the greatest praise for the enormous work he has done in determining the ultimate composition and toxic action of the large majority of all the known toxines and ptomaines, has shown that much of the detrimental action of bacteria is due either to their powers of oxidation or reduction, so that by this means perfectly harmless constituents of the tissues may be converted into deadly toxines, new chemical individualities. In this manner he has extracted from putrefied human, horse or beef tissues, neuridin, cadaverin and putrescin, among the *ptomaines*, and mydato-toxin (an isomer of typhotoxin), also neurin and methylguanidin, among the *toxines*. The last two he has shown to have decidedly toxic action, while nicely illustrating the power of bacteria to convert innocent into dangerous molecules. Neurin can be produced from the common cholin of the body by the abstraction of a molecule of H_2O, and thus a *leucomaine*, poisonous only in immense doses, is by the bacteria changed into the *toxin* that induces death through its paralyzing the posterior extremities, stopping the heart in diastole, as well as developing the other symptoms of the muscarin group, salivation, weeping, pupillary contraction and profuse diarrhœas!

Methylguanidin, on the other hand, demonstrates the oxidation powers of the bacteria, for as source of the intensely toxic convulsive poison we have the comparatively innocent constituent of all animal tissues, *creatin* (Brieger). Simple action of kalium permanganate will convert creatin into methylguanidin in like manner.

Not alone from all this are we to regard as simple foundation stones in the future of medical science, but already very important deductions have been made and utilized. A *fact* (that can be set down as almost an axiom) is that the waste products of microörganisms, as is the case among the macroörganisms, are fatal in the one case as in the other. Further, the excreta of one are also fatal to many other bacteria, the fatality being proportional to the similarity of biological plane. Long before we knew them to be waste products of organisms we utilized our common antiseptics to destroy other or the same organism which had prepared it for us. How instructive is it, then, that phenol, our common microbicide, is the waste product of the bacterium commune coli, as likewise its congeners, indol and scatol, all antiseptics and all derived from albuminoids by the action of germs!

Indigo, belonging to the same group and an antiseptic, is a commercial product of a special ferment and has its admirers in the medical world. Lactic acid (the waste leucomaine of muscle cells), with which we have so far familiarized ourselves that we forget its cellular origin in our utilization of it to destroy the bacillus of green diarrhœa of infants, or add it to our prescription when correcting a fermentative dyspepsia so frequently due to foreign ferments. Nature's safeguard against infection through the alimentary tract we utilize to destroy the dread *B. tuberculosis* in its laryngeal manifestations. Recalling the facts that whenever toxic substances are introduced into the alimentary tract, they are taken care of in one of the following ways:

1. If alkaloids, by conjugation with the "S" biliary acids.

2. If carbohydrates, they escape the liver and are taken care of by the blood and pancreas.

3. If belonging to the class of phenols, they are combined with a sulphuric radical, and when that gives out, are then combined with glycosuric acid and thus rendered innocuous.

We close with the conclusions that:

1. A thorough knowledge of the waste products, or microörganisms, is essential to the clear perception of an infectious disease.

2. That greater utilization should be made of the knowledge that waste products of bacteria are toxic or inhibitive to other than themselves.

3. That normal foods often become toxic through the action of organized ferments.

4. That normal digestion is a continual tidal process of fermentation.

5. That increase of the sulphates is indicated in toxæmia due to excessive fermentation or retention.

6. That to certain toxines the system may become habituated, when a protection is afforded and a rational explanation is offered to protective inoculations, however carried out.

THE PUBLICATION OF PAPERS.

It seems desirable that gentlemen who presented papers at the last annual meeting of the Association should be advised as to the order in which they have been arranged for publication. At the earliest date possible after the meeting the papers from each of the several Sections were numbered and *filed* in the order in which they were there presented.

In making selections for publication it seems a matter of justice that each Section should be represented in frequency according to its number of papers. Thus, if in one Section thirty articles were presented, and in another only ten, three from the first should be published and one from the latter, and that thus no preference would be accorded to any individual Section.

The aim has been to present from three to four articles in each issue of THE JOURNAL, and the only departures from the order indicated have been when in connection with the publication of one very long paper two or three short articles were needed to secure that end. In that manner we are steadily moving on in the presentation of papers, and if those members whose articles have not yet appeared will consult their Section programmes, they will find that the reason lies in the fact that they were late in the presentation of the same in their several Sections.

This much is due to those who so kindly favored the Associations with their communications, and it is also due to the Management which is seeking to act in this matter with utmost impartiality.

PRELIMINARY ARRANGEMENTS.

We are glad to announce that Dr. William B. Atkinson, 1400 Pine St., Philadelphia, as General Secretary of the American Medical Association, is already perfecting arrangements with the principal railroads in the country, whereby special rates of transportation may be secured for members of the Association and such members of their families as may desire to attend the next annual meeting at Nashville.

The Secretary desires, as far as he may, to learn at an early date how many individuals may probably desire to avail themselves of such special rates, and their localities. He therefore invites individual correspondence and will avail himself of the information thus obtained in securing the desired concessions.

Until the last year, the railroads have pursued a liberal policy in this matter, and a generous patronage has well repaid them. Happily, this year the meeting is so located that no single road can bar them from a like liberal policy. We anticipate that such arrangements will be made that the profession will appreciate the inducements offered, and that there will be a very large representation at the annual meeting. Let every member of the Association who designs to attend, at an early date indicate to Secretary Atkinson the number of tickets he may wish to secure and his lines of travel.

It may seem to individual members a little matter, but the aggregate will be very helpful in securing final results.

DR. HOLMES has recently been moralizing over length of days as the reward of correct living. He is reported to have said that "Death to the aged man wears as pleasing a face as sleep does to one who is tired."

EDITORIAL NOTES.

HOME.

A Natural Turkish Bath has been discovered near Salida, Col. In digging a well not far from the Wellsville Hot Springs a cave was struck with apartments similar to the rooms of a house, the heat being so intense as to cause a veritable sweat-bath. The largest room was 20 feet long, 10 feet wide and 10 feet high, and the walls and ceiling perfectly smooth.

Medical Association of Life Insurance Directors.—An organization has been formed among the medical directors of life insurance companies. Twenty companies were represented at the first meeting, which was held in New York City in December. The Association has for its object the promotion of medical science as applied to life insurance. Dr. J. M. Keating, of Philadelphia, is President and Dr. J. Frank Wells, of Boston, Secretary.

Dr. T. J. W. Burgess has been appointed Medical Superintendent of the new Protestant Insane Asylum of Montreal.

Baleful Effect of Idleness upon Prisoners.—The annual report of Prison Superintentent Lathrop, of New York State, presents an official statement of the deplorable results of enforced idleness upon convicts, "in an unprecedented death-rate and an unequalled numerical lapse into insanity." A year's experiment with a law passed in 1888 to meet the clamors of the "friends of labor" has demonstrated that it is the height of cruelty to the prisoners to suspend the usual industrial operations in the State prisons. The prisoners have appreciated this result long before the law-makers and our citizens generally; and when at Sing Sing prisou it became known to the former that an authority had been procured for the modified reintroduction of employment, a shout of joy went up from the convicts, and they began to importune their keepers to antedate or anticipate the day of their farewell to idleness. The four chief consequents of the prison labor law of 1888 were an increase of insanity, a higher death-rate, a shattered *morale* and an unprecedented deficit in earnings as compared with expenditures. At the close of the prison year, September 30, the total number of inmates in the three prisons was 3,480, of which 219 were classed as insane criminals, or about one in 15. The present Legislature will be called upon to provide for the reorganization of the labor law for convicts, and wipe out the baneful experiment of 1888.

The Medical Mirror.—The initial number of this new magazine is at hand. It is replete with original articles, each possessed of special value, and together representing some of our foremost medical writers. We anticipate that the purposes set forth in its prospectus and in the present number will be more than realized. Under the editorial control of Dr. I. N. Love, we are sure that it will quickly command an extended circulation and a liberal patronage, and that it will prove in every way helpful in the growing field of American medical journalism. We welcome it as an exchange and wish for it abundant success.

FOREIGN.

La Grippe.—The epidemic of influenza, or la grippe, which has been raging in Paris, is on the decline.

Quinine and Antipyrin for the Cure of Influenza.—A cablegram has appeared in the daily papers to the effect that the eminent physician of London, Sir Oscar Jennings, relies wholly upon quinine and antipyrin for the cure of influenza; the former drug to kill the microbe, the latter one to quell the pain. Also that Dr. Jennings denominates la grippe as "a bastard pulmonary rheumatism." The advocacy of antipyrin in the papers, and in other ways, has practically resulted in the absorption of the supplies of that drug held by the wholesale druggists of the country. The price has advanced over 100 per cent. in sixty days.

A New Professor of Anatomy at Aberdeen.—Dr. Robert W. Reid has been made Professor of Anatomy at the University of Aberdeen. He is an alumnus of that institution and formerly a demonstrator of that branch, prior to his becoming a lecturer at the St. Thomas Hospital, London. The fact that Dr. Reid has secured this honorable appointment in the face of a spirited competition will bring to memory, for purposes of contradiction, the sinister suggestion of old Dr. Samuel Johnson, who averred that the pleasantest prospect that greets the eye of a Scotchman is the highroad to London. But here we have a Scotchman who is only too happy to find his way out from London.

TOPICS OF THE WEEK.

THE INFLUENZA EPIDEMIC IN GERMANY.

Yesterday's telegrams from various German districts give some idea of the dimensions which the influenza epidemic has attained. In Dantzic so many teachers and schoolboys are ill that only some of the usual lessons are being given in the high school, and several other schools are closed altogether. Work is partially paralysed, too, in the offices, especially in printing offices. In Hamburg several schools have had to be closed. At Wandsbeck, near Hamburg, 3,000 cases are announced, and three elementary schools are closed.

Professor Leyden, of the Charité, spoke to his students on this subject the other day. He emphasized that influenza is a disease of specific character, by no means deserving the disregard with which it is frequently treated. It must not be placed in the same category as common colds. Its special character was indicated by the suddenness and severity of all its symptoms, especially fever, and above all by its pandemic character. He declared that more than a third of the population were ill at present. He also pointed out that this complaint was very often accompanied by deep mental depression, the patient feeling intensely ill all over in a much higher degree than was usual in common colds. For this reason the treatment of the mind and feelings of the patient deserved the special attention of the physician. He discussed the points of resemblance between influenza and the dengue fever, which has been raging of late in Constantinople, Smyrna, and other Turkish cities, and favored the theory that the former has sprung from the latter, which generally spread from east to west and from south to north.

The *Berliner Klinische Wochenschrift* (Berlin Clinical Weekly) writes: "It can no longer be denied that Berlin too has been attacked by the epidemic, though it is difficult to ascertain how widely it has spread, for most of the cases which go by the name of influenza among the laity are really merely imaginary. Anyone who should reckon every slight attack of bronchial catarrh with fever, such as the season brings with it, or colds in the head and headaches, under this rubric, would have to state a very high percentage of cases in Berlin too. Whoever, on the other hand, demands a stricter diagnosis, especially whoever requires a distinct appearance of the nervous symptoms, along with the varying and complex objective symptoms, with the partly catarrhal, partly gastric, disturbances, will be more cautious with his statistics. All trustworthy observers lay special stress on the fact that there is a striking and characteristic disproportion between the objective symptoms, including even the often high but very transient fever, and the subjective feeling of illness, the weariness and depression. Real cases, however, have also been observed—in the Charité for instance—with absolute certainty, and it has been pointed out that the complaints which are notoriously wont to accompany influenza epidemics -- viz., catarrhal and croupous pneumonias — have unmistakably increased. In these cases antipyrin or antifebrin seems to have been universally prescribed, with the effect that the subjective state very rapidly improved."

A committee of eminent men, including several of the most highly reputed physicians, has been formed for the purpose of tabulating statistics of the epidemic in Berlin, and the assistance of the Statistics Office of the city has been secured.—*The Lancet.*

MICRO-ORGANISMS IN WATER.

There is a difference of opinion amongst many chemists as to whether the presence of a large quantity of bacteria or a considerable amount of organic matter in drinking-water justifies as such its condemnation. Waters containing few bacteria and little organic matter have been known to produce distinctly injurious results, while some waters containing much of both appear to be comparatively harmless in their action. Of course, very much depends upon the source of the water and the nature of its surroundings. The fact, however, that organisms believed to be agents in bringing about certain diseases exist in water for a long time, during which their activity is preserved, makes their absence distinctly desirable. Certain operations in nature would seem to indicate this. Investigations have shown that more bacteria are usually present in rivers than in lakes, in spite of the fact that lakes themselves in many cases are more or less polluted by rivers passing through populous towns. In a very interesting paper in the *Zeitschrift für Hygiene*, 1889, 86, B. KRUGER considers that this rapid decrease in the number of organisms may very possibly be due in part to the action of direct sunlight, but in the main to the tendency of water in a comparatively undisturbed state to deposit and precipitate. He therefore carried out a number of experiments with a view to determine how far the removal of organisms was brought about by the mere mechanical deposition of inert matter and also by precipitation as a result of chemical action. The mechanical precipitants employed, all in a state of fine powder and sterilized, were alumina, brickdust, clay, chalk, sand, coke and charcoal. Water obtained from an ordinary service pipe was impregnated with a liquid containing bacillus growth of a species incident to tap water. This was divided into two portions—one for precipitation with the inert substance and the other untreated for the sake of comparison. Experiments were similarly carried out in which precipitation was obtained as the result of chemical action such as is brought about by the addition to the water containing naturally lime, magnesia, etc., of substances like wood ash, sulphate of alumina, and slaked lime. The general conclusion come to by the author from the results obtained is that undoubtedly large numbers of bacteria are carried down by inert substances merely sinking in water, but that the action is very considerably increased when, in addition to mechanical deposition, a chemical precipitation also takes place. The corollary is evident—inert substances do mechanically assist in the precipitation of micro-organisms, but preference should be given to chemical treatment.—*The Lancet.*

PRACTICAL NOTES.

HOW TO LOOK FOR TUBERCLE BACILLI IN SPUTUM.

Ehrlich's method, somewhat modified, is as follows:

Press a little of the suspected sputum between two cover-glasses so as to get a very thin layer. Dry the cover-classes separately, either by moving them through the air or holding over a flame or by passing a few times through the flame. This fixes and dries the preparation. Place some drops of analine oil in a reagent glass half-filled with water, shake, and filter into a watch glass. Add several drops of an alcholic solution of fuchsin or methyl violet to the contents of the watch glass till they are markedly colored. Warm this mixture till it begins to smoke. Place the cover-glass with the dried sputum, face downwards, on the warm liquid and let it float from three to five minutes. Remove and rinse in alcohol, acidulated with nitric or hydrochloric acid, until very slight traces of color remain; then rinse in ordinary alcohol (70 or 80 per cent). Dry the cover-glass as before by holding above a flame, clean it where necessary, add a little pure glycerin and set under the microscope. An enlargement of 400 diameters will show the bacilli if present.—*Col. and Clin. Record.*

EMBALMING.

The best process of embalming is called the "Brunelli Process." The circulatory system is cleansed by washing with cold water till it issues quite clear from the body. This may occupy from two to five hours. Alcohol is injected so as to take out as much water as possible. This occupies about a quarter of an hour. Ether is then injected to abstract the fatty matter. This occupies from two to ten hours. A strong solution of tannin is then injected. This occupies for imbition from two to ten hours. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy from two to five hours. The body is then perfectly preserved and resists decay.—*Sanitarian.*

TREATMENT OF ERYSIPELAS.

Dr. Koch treated numerous cases of erysipelas with the following ointment:

Creolin	ʒ i.
Iodoform	ʒ iii.
Lanolin	ʒ i.

This ointment is spread as an even smooth layer over the affected skin and its surroundings, on an area of at least two to three inches to the outside of the inflamed parts. The whole is covered by a piece of mackintosh. Dr. Koch selected creolin in the above prescription because he thought that it was possessed of first-class disinfectant properties, without sharing the dangerous after-effects of carbolic acid. Iodine, which is derived from the decomposition of iodoform, stimulates absorption of inflammatory products. Lanolin has been chosen because it penetrates the skin best of all ointment bases.

DETECTION OF PUS IN THE URINE.

Drop into the specimen of urine enough tincture of guaiac to give it a milky appearance, and heat it a few minutes to 100 deg. Fah. If pus is present, a blue tint will develop. Otherwise the urine may be passed through a white filter, on which is then allowed to fall a few drops of tincture of guaiac, producing, if pus is present, a distinct blue discoloration.—*Pharma. Era.*

CULTURE OF VACCINE VIRUS.

A Russian physician has succeeded in cultivating vacine virus, and finds that the virus, artificially cultivated, is as effective as the genuine, and has the advantage of absolute purity, so that its use involves no danger from scrofula, tuberculosis or other constitutional diseases.—*The Pacific Record.*

FOOD FOR GASTO-ENTERITIS OF CHILDREN.

In the *Lyon Médicale*, a writer advises the following food in gastro-enteritis of infants:

Wheat	1 tablespoonful.
Oatmeal	½ "
Barley	½ "
Water	1 quart.

This is to be concentrated by boiling to one pint, strained and sweetened. The result is a mucilage readily taken by children. In gastro-enteritis the patient should be given small quantities of this mucilage at frequent intervals; and no other food administered until the stools assume their normal color.—*Dietetic Gazette.*

ARTIFICIAL LABOR.

Induction of artificial labor is done simply by a method recently brought out by Pugliatti, but which the translator has practiced many years with satisfactory results. Patient is brought to the edge of the bed, a bivalve speculum is introduced, and an antiseptic injection administered. A clean aseptic, elastic bougie is gently introduced as far into the uterus as it will pass; the remainder is coiled up in the vagina. If pains do not begin in three hours another vaginal injection is given and followed by the introduction of a larger bougie.—*Times and Register.*

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting, Thursday, October 3, 1889.

DR. THEOPHILUS PARVIN IN THE CHAIR.

(*Concluded from page 67.*)

DR. THEOPHILUS PARVIN reported

A CASE OF TUBAL PREGNANCY, WITH SPECIMEN. —PROBABLE DIAGNOSIS, AND REMOVAL PRIOR TO RUPTURE.

Mrs. Mary E. W. was brought to the hospital of Jefferson Medical College, September 19, suffering from a probable ectopic gestation. She is 26 years old, married seven years, and has had three living children, all of whom she has nursed, and during each lactation menstruation has regularly occurred; her youngest child is thirteen months old, and she is now nursing it. About June 29 the usual flow began, but has continued ever since, with brief intermissions, under the use of medicines given by her physician, Dr. Horrowitz. In the latter part of August and in September, she has suffered somewhat from nausea; and this, with some other things, would have led her to believe she was pregnant, had not the hæmorrhage from the uterus been so constant. About September 1 she began to suffer with occasional violent attacks of pain low down in the left side, followed by much soreness; these attacks were especially liable to occur when she lifted her child.

Because of the temporary absence of Dr. Horrowitz from the city, she went some three or four times to the dispensary of the Pennsylvania Hospital, where she was examined by Drs. Baldy and Bradford, who found a tumor on the left side of the uterus, tender and cystic, with a history of almost continuous bleeding for some weeks, there being, however, no signs of any shreds; pain in the lower part of the abdomen; only very meagre symptoms of pregnancy. A probable ectopic gestation was diagnosed and operation urged.

The day that she came to Jefferson Hospital, she had with the hæmorrhage a discharge of small, membranous fragments; whether decidual or not, of course could only be certainly known by microscopic examination. A day or two before some similar fragments were discharged, according to her statement.

Upon examination, I found a tumor adjacent to the uterus upon the left side, the uterus somewhat enlarged, and very great sensitiveness to pressure, both in the vagina and in the lower part of the abdomen, especially at the left side.

The history, the examination, and the previous examinations of Dr. Baldy, with his conclusions, gave me little doubt that the case was one of tubal pregnancy.

Abdominal section was done on September 20, Dr. Baldy being present, and Dr. W. E. Ashton assisting in the operation. The gestation cyst included in the tube was removed and the specimen is now shown you.

The patient's convalescence has thus far been uninterrupted, almost two weeks having elapsed since the operation.

DR. J. M. BALDY reported

A CASE OF TUBAL PREGNANCY, WITH SPECIMEN. —NON-DIAGNOSIS, BUT REMOVAL PRIOR TO RUPTURE.—RECOVERY.

Mrs. G. R., (colored), walked into the outpatient clinic of the Howard Hospital, July 5, 1889, suffering from pain in her abdomen, so similar to that which I have often seen go with a pyosalpinx, that I diagnosed this disease before examining her. The examination revealed a large, apparently tortuous, tender mass, posterior and slightly to the left side, giving a boggy feel to the touch. The diagnosis was verified, a saline purge given, and an immediate operation advised.

One week later a messenger summoned me to the home of the patient, where I found her lying on the bed, suffering from severe pain in the abdomen. She stated that the night before a fit of sneezing had given her a similar pain. She arose from the bed and walked to the table, a distance of about six feet. While standing there she was seized with a severe, cramp-like pain, which doubled her up, and lasted for a few moments. The idea took possession of me that she possibly was suffering from an ectopic gestation. I helped her onto the bed and made a most careful examination, which revealed the following: She had been having children at regular intervals of about two years. She had a child just a year and a half before, since which time her menstruation had been pretty regular. With the exception of an occasional "pain in her belly" she had always been well.

Before coming to me she had been bleeding irregularly for about two weeks. The show was and had been clear blood, without any signs of shreds. Her husband had been away from home for about three weeks. The pain in the abdomen had been there since the bleeding began. There was not the slightest sign of pregnancy, either subjective or objective, nor did she think she was pregnant. A reëxamination of the pelvis showed only what had been before found, viz., a cystic mass, which did not pulsate, posterior and to the left; apparently a distended tube. The uterus was in position of normal anteflexion, and there was a perfectly normal cervix for a multipara. There was an elevation of temperature, and the woman had had chills and creeps. I asked Dr. Hamill to see the patient for me and he verified my examination throughout. Together we decided

that it was a case of pyosalpinx, stating at the same time that we had thought of ectopic gestation as a possibility, but were wholly unable to find sufficient data on which to verify our suspicion.

On July 13 I opened the abdomen, with the assistance of Drs. Hamill and Naylor, and in the presence of three or four other gentlemen, and removed a left tubal pregnancy, which I here present to you. As I tore away the adhesions which bound the mass to the pelvic walls, the cyst was ruptured and a teaspoonful of black clots was discharged from the sac itself. It was evidently a pregnancy of the fimbriated end of the tube, which had become adherent to the pelvic wall, the pelvic wall thus forming one side of the sac. The case well illustrates the difficulty, nay impossibility, of at times diagnosing ectopic gestation. In three weeks the patient was sent home, and is to-day in her usual good health.

I would emphasize the following points, viz :—

The case is one of primary or unruptured tubal pregnancy. (There are now four such cases on record from this city alone, viz., Dr. J. Price's, Dr. Goodell's, Dr. Parvin's, and my own.)

The patient is a colored woman, which is rather rare.

The patient did not have a long period of sterility, but was bearing children regularly.

There was at no time a sign of a decidual discharge.

There was at no time the slightest subjective or objective sign of pregnancy.

Dr. E. W. Cushing, of Boston: The subject of extra-uterine pregnancy is one of the greatest interest to me, and I can say, from sad experience, that it is not easy to make a diagnosis. After some obscure symptoms of irregularity of menstruation, etc., a near relative was taken suddenly with a severe attack which, after the event, I felt was due to a tubal pregnancy ruptured into the broad ligament; finally she recovered without operation. This turned my attention to the subject, and I looked up the specimens in the Harvard Medical School, which Dr. Parker photographed, and I published.

In another case, of which I saw the specimen, a gentleman operated for an ill-defined tumor. The cyst was opened after the operation, and a fœtus three-fourths of an inch in length found. There had not been a suspicion of pregnancy.

I believe that almost every one agrees in regard to the difficulties of diagnosis. and I believe that pretty much every one here agrees as to the necessity for surgical treatment; yet as a subject for debate here, I would suggest in opening this discussion that there may be cases where a man may suspect extra-uterine pregnancy, but yet be not sufficiently certain to operate, or not be able to get permission to do so, or he may be unable to do an abdominal operation himself, or secure the services of one that can. I would suggest that under such circumstances the use of the faradic current is not only justifiable but prudent. This would be proper only in the earliest stages, before the fœtus has reached such development that it would leave behind a source of irritation and suppuration. I think that the condemnation of the electric treatment in the early stage has been too sweeping and severe. Certainly the horrible cases which are recorded from attempting to puncture the fœtal sac, especially at a later date are not likely to be repeated.

Dr. Wm. Goodell: In regard to the electrical treatment of extra-uterine fœtation, I must confess that I was theoretically inclined to believe in it. But when I had met with cases of extra-uterine fœtation, and I saw the mass that was present, and the adhesions and injuries which adjacent organs had sustained, I could no longer uphold it. In my opinion electricity should be reserved for those cases in which the woman absolutely refuses any surgical operation, or when the physician is not a laparotomist, and he cannot secure the services of one. The amount of adhesions is, however, so great, and the injury done the appendages so severe, that the woman cannot in any case conceive on that side. This was apparent in the case reported by me to the Society, in which I operated previous to the rupture. In this case, indeed, the appendages of the unimplicated side were so diseased as to need removal. The operation is therefore warranted, if, for no other reason, simply for the diseased tubes and ovaries. I have practically been converted to the belief that electricity, and particularly electrolysis, should not be used in these cases. The electrolytic action is a most dangerous one. Although advocated by Apostoli, the results have been most disastrous in the cases in which it has been tried.

Fifteen years ago, in a case which I now believe was one of extra-uterine pregnancy, I punctured the tumor with an aspirating needle. In a few days septicæmia set in and the woman died.

The injection of morphia, as recommended by Winckle and by others, has met with better success. But while it destroys fœtal life, it cannot cure the injuries sustained by the appendages, for which the best remedy is the knife.

I have had four cases of early extra-uterine pregnancy within a few months, all of which were successful. One I supposed to be a simple case of disease of the appendages, and operated accordingly. It had burst, and without marked symptoms. In another case of ruptured sac, the specimen was perfectly analogous to that presented by Dr. Baldy, and he was present at the operation. The history of the third case I have already given to the Society, and I presented the specimen. I diagnosticated the ectopic pregnancy and operated before rupture. The fourth case was one of

interstitial pregnancy, on which I operated the day before I went to Europe. The woman was brought to me by her physician, with the history of hæmorrhages and great suffering, but with none of pregnancy. Her physician thought that the tumor was either a fibroid or a polypus. I found a fluid tumor bulging into the endometrium, and slightly dilating the os uteri. My diagnosis was a necrotic intra-mural fibroid tumor. Using Adams' subcutaneous saw, I cut into the mass, and removed a quantity of grumous blood and broken-down fragments. These latter were examined under the microscope and found to be placental tissue. The subject of extra-uterine fœtation is of great interest, not only before and after rupture, but also in relation to the cases that go to term. I shall never forget the first case of extra-uterine fœtation that I saw. It was the classical case of the late Dr. Parry—the one which led him to write his admirable essay on the subject.

A distinguished surgeon was called in. This was in the days when we made marked distinction between pelvic cellulitis and pelvic peritonitis. He diagnosticated the case as one of pelvic cellulitis. There was heat and great pain, with complete immobility of the womb. The patient did not improve, and I was called in, and diagnosticated the case as one of pelvic peritonitis, which in one sense it was, as the subsequent history will reveal. My treatment was not satisfactory, and I lost sight of the case. Several weeks afterward, while I was confined to my house for a few days by an illness, Dr. Parry came to see me. He sat down by my side, and after asking about my health, he referred to this case, and pointing his long forefinger at me, said, "You have made a great blunder." He then told me that he had been called in the day before to see the case, and that he considered the case one of normal pregnancy, for he had heard the heart sounds with the utmost ease; in fact, had never heard them so distinctly before. I said to him: "Dr. Parry, of course you are right in the theory of pregnancy; but depend upon it, there is something wrong, for I can hardly think that either Dr. —— or myself could have made such a mistake without some good reason for it." The time for labor came, but it did not set in. Then the death of the child occurred, Dr. Parry was now again sent for, but this time he was unable to find the os uteri, so he sent for me. With great difficulty I found the cervix above the pubic bone. We then made the diagnosis of retroverted gravid uterus. At the next visit, it intuitively flashed across my mind that it was a case of extra-uterine fœtation, and then the case was clear enough. To clinch the diagnosis, Dr. Parry introduced a hypodermic syringe needle and drew off some amniotic fluid. In a few days the head bulged down into the vagina, and we could distinguish even the sutures. We wished to incise the vagina and deliver the child with forceps; but the woman refused an operation, and died. At an autopsy, Dr. Parry withdrew the sac and fœtus, and exhibited them to this Society. Not long after this I saw a second case. The woman had passed full term, the child had died, and yet labor did not come on. Her physician, much puzzled, called me in. In this case the cervical canal was open, and suspecting extra-uterine pregnancy, I passed my finger into the uterine cavity and found it empty. The case was seen by one or two other physicians in consultation with us. We were anxious to operate, but the husband would not permit it, unless we could assure him positively that his wife would recover. While waiting the woman suddenly died.

The third case I saw a number of years ago in a mulatto. The child was living at the time that I operated. There was no difficulty, either in the diagnosis or the operation. The child, being hardly viable, gasped a few times and died. I did not dare to remove the placenta, and as the umbilical cord was very large, I made the mistake of leaving it in the lower angle of the wound as a drainage tube. The woman died a few days later, and at the autopsy we found the liver and lungs riddled with pyæmic abscesses.

I operated on another case in which the fœtus must have died at the age of six months. The woman was perishing from blood poisoning. She was emaciated, had high temperature and night sweats. Pus was evidently present somewhere, and I diagnosticated the tumor as a suppurating ovarian cyst. What perplexed me was great resonance in front. At the operation this was explained by the presence of the gases of decomposition. Excessively fœtid pus escaped. I removed the fœtus, the bones of which, with the scalp and umbilical cord, were the only parts intact. The placenta was not to be found. The woman died suddenly from supposed heart-clot, after a violent altercation with her husband.

Not long after I was called to Mount Holly to see a case which had been correctly diagnosticated by the physician. I removed a petrified seven months' child. The patient had albuminuria, but did well until the eleventh day, when uræmic convulsions set in, and she died comotose. All these operations were performed before the days of antiseptic surgery, and I have not since seen a case of advanced ectopic gestation.

I believe that Tait is correct in explaining these advanced cases by the rupture of the tube and the escape of the unbroken gestation sac into the fold of the broad ligament. The behavior subsequently is precisely like that of an intraligamentary ovarian cyst.

In regard to early diagnosis, I should say that the most common symptom is the arrest of menstruation for one or two periods, followed by ir-

regular uterine hæmorrhages. It is true that pelvic colic is a common symptom, but not so common as the other. But I do not know that it is necessary to make an absolute diagnosis; given a woman with the exacting symptoms of a suspected extra-uterine fœtation, who has a displacing tumor on one side of the womb, are we warranted in operating merely to remove the tumor, whatever its nature? Do we not constantly, on less provocation, remove pelvic tumors whose character is determined only by the operation? Instead of an extra-uterine fœtation, we may find pyosalpinx, or an ovarian abscess; but were we not in duty bound to perform the operation, even at the risk of an error in diagnosis?

Dr. Barton C. Hirst: I was some time ago called to a case in consultation which presented a clear history of extra-uterine fœtation; cessation of two periods, hæmorrhage with the discharge of deciduous membrane, a distinct tumor to one side of the uterns, and the subjective signs of pregnancy, with swelling of the breasts and vomiting. Dr. Hamill and myself urged operation, but the family being dissatisfied, we were discharged. Another physician was called, and Dr. Parrish was consulted. He recommended the use of electricity, and a current was applied with relief of the symptoms, and, I believe, complete cure of the patient. There may be a varicose vein in the broad ligament which having burst may present all the signs of extra-uterine fœtation after rupture of the sac. I have had two such cases; in one case I opened the abdomen and found a blood-tumor in the layers of the broad ligament, and considerable blood in the peritoneal cavity. From the history and physical signs, I am quite sure that this was not an extra-uterine pregnancy.

I saw, in consultation, a fatal case of this kind after labor a short time ago. The labor was a difficult one and ended by craniotomy. There was rupture of the vein in the broad ligament. The bleeding was first between the layers of the broad ligament. This then ruptured into the peritoneal cavity and the woman died. There was no rent in the uterine wall. Such cases might be mistaken for extra-uterine fœtation.

Dr. M. Price: In most of these cases, all that we can make out is that there is something which should be removed; but as to a distinct diagnosis of extra-uterine pregnancy being made, I do not believe that it is done one time in ten. Dr. Parvin, in his case, would not have been surprised to have found distension of the tube from any cause. In a case which presented all the symptoms of extra-uterine pregnancy, and where I expected to find this condition, I found a pair of large pus tubes. I have seen twenty or twenty-five cases of extra-uterine pregnancy, nearly all of them ruptured tubal pregnancies. It does not interest us a particle whether the cases were diagnosed or not. There is trouble present of such a serious character that it does not become us to lose a single moment. Most of these cases come into the coroner's and not the surgeon's hands. Delay in operating is adding 10 per cent. to our mortality. It is our duty to operate on the first indication, and if we are mistaken, to thank God for the absence of so serious a condition.

Dr. Joseph Hoffmann: I have twice operated for extra-uterine pregnancy and did not find it. I operated once for something else and found extra-uterine pregnancy. The first case presented the signs of extra-uterine pregnancy to even a more marked degree than that of Dr. Hirst— coming on after a sterility of eight years, a retroverted mass, flooding and violent pain. At the operation I found two pus tubes. She was pregnant and miscarrying and completed it after the operation. The second case was almost on a par with this. In the third case I operated for pus tube and found extra-uterine pregnancy. The trouble is, that these men who claim positive diagnosis do it from a single case, which, though by no means certain at the time of operation, resolves itself into an absolute diagnosis when they come to publish it. It is the dreams and the nightmare of desire to publish something startling, which make the diagnosis. There are such a variety of conditions in the pelvis giving rise to these symptoms that it is impossible to say absolutely what we have. I have gone over Dr. Thomas' list of cases and found that, so far as absolutely correct early diagnosis is concerned, it is worth nothing. In only one case, if my memory serves me, was there a post-mortem. In three or four in which death occurred there was no post-mortem; and in the others, where the current was used, the diagnosis in most of them was made after symptoms of rupture.

The treatment by the electric current is advocated by Reeves, who strangely falls into a fallacious argument. He says that if we use electricity in cases where there are symptoms of extra uterine pregnancy, and these symptoms disappear after the use of the current, why not call them extra-uterine, as we do in other diseases, where diagnosis is made, and a line of treatment adopted with good results, and illustrates the argument by the use of mercury in syphilis. If the effect of electricity was as well established as that of mercury in syphilis, the argument would be more logical. When we feel that rupture has occurred, electricity is a dangerous thing to trifle with. The principal danger is in delay. The longer the growth is allowed to continue, the greater the danger from adhesions, rupture and complications which cannot be foreseen.

Dr. J. Price: There are some interesting facts in connection with the history of this subject. It is curious that a few years ago a man with an experience of one doubtful case should discuss

the subject before the American Gynæcological Society. It is also curious that the same man, with a single experience with a woman sterile five years, having pelvic pain, irregular menstruation, a delayed period for six days, and recurring attacks of pain, should claim to have killed the fœtus of an extra-uterine pregnancy by the use of electricity for ten *séances* of half an hour's duration each, on consecutive days. Then follows another man with a history of one case, and another in consultation. The man with an experience of one case used electricity, and the case passes into the hands of another, who writes to the first that he is going to operate. The first physician at once writes not to do it, as he has killed the fœtus; while the operator already holds in his hands a large hydrosalpinx.

Dr. Baldy, in a recent paper in the New York *Medical Record*, lays down certain propositions, and makes the diagnosis easy in many cases. He has forgotten that many of these patients die as if with a ruptured aneurism before the woman suspects that anything is wrong. These cases go to the coroner. In the cases that reach the surgeon the hæmorrhage has not been so great.

It is interesting to refer, in this connection, to the cases of Dr. Edis and Dr. Bantock. Dr. Edis found on one side an extra-uterine pregnancy, and on the other a small ovarian cyst. Dr. Bantock found on one side an extra-uterine pregnancy, and a pus tube on the other. I have here an enormous tubal pregnancy, with rupture at the pavilion, and the abdomen filled with blood. On the other side was a beautiful hydrosalpinx.

One of the prominent cases on record I saw a few hours before the operation. We agreed that there was a doubtful history of extra-uterine pregnancy, but no prominence was placed upon this point. It might have been a small ovarian or dermoid cyst, or a large hydrosalpinx. When the abdomen was opened, every one expressed great surprise at the presence of tubal gestation. The same case has flourished over the world as a case of positive diagnosis. This is the case in which letters were written inviting different men to the operation; but the letters were written after the operation. This case will not bear close scrutiny. If we look over the Transactions of the American Gynæcological Society, we shall find that the men who have had the least experience speak most positively.

DR. NOBLE: Monday, a week ago, I removed an extra-uterine pregnancy which was rather unusual in the conditions present. In my case, the woman had skipped the period in August. There was nausea, and other symptoms of pregnancy. In September, a week before the sickness should have occurred, she began to flow freely; then had cramps and fainted in the street, and afterwards had fainting attacks. I saw her two weeks after the beginning of the flow. At one time, while in the water-closet, she passed what she thought to be a large clot. The opinion of her physician was that she had had a miscarriage.

I found a mass on the left side pushing the womb to the right. I recommended operation, which was not consented to for some days. In the meantime the hæmorrhage continued. The patient was seen by Dr. Kelly, and we agreed that it was almost certainly an extra-uterine pregnancy. At the operation I found the blood in the peritoneal cavity. The blood was almost entirely clotted. The ovum was attached not far from the uterus. The hæmorrhage had taken place in the tube, and the clots had been forced out through the fimbriated extremity. On the other side there was a hydrosalpinx. She had also had the rectal tenesmus. She has done well since the operation.

DR. B. F. BAER: I wish to go on record as one who believes that it is as easy to diagnose extra-uterine pregnancy as to diagnose any other condition within the abdomen (as hydrosalpinx or pyosalpinx) positively. But the man who says he can make such a diagnosis positively, is an unsafe man. Dr. Taylor assisted me some five years ago in a case of extra-uterine pregnancy in which the diagnosis was made. The fœtus had advanced to the age of two and one-half months, and the symptoms which have been mentioned were present. There was enlargement of the uterus, and I heard the placental bruit. I felt fluctuation in this sac, and was almost certain that I detected ballottement. I, however, operated in an unscientific way, cutting through the vagina. I got the embryo, but the patient died.

DR. M. PRICE: Did I understand Dr. Baer to say that he heard the placental bruit at two and one-half months?

DR. J. M. BALDY: How did Dr. Baer detect ballottement at this early stage?

DR. BAER: I have heard this murmur in normal pregnancy at two and one-half months. I believe that it is not yet clearly understood whether the murmur is placental or simply a uterine murmur. It is, however, due to pregnancy.

In regard to ballottement, given a sac filled with liquor amnii and an embryo dangling in it, I think that ballottement could be readily detected.

DR. WILLIAM GOODELL: Dr. Baer is right in regard to early ballottement. This is said to be detected much earlier in extra-uterine fœtation than in natural pregnancy.

DR. J. M. BALDY: I know there are cases on record, but I doubt the occurrence of ballottement in these. It could not possibly have occurred in such specimens as that presented by Dr. Goodell a few months ago, or those of Dr. Parvin and my own presented to-night. And so it has been with all the cases I have seen. Reference has been made several times to a paper of mine in the New York *Medical Record*, in which I lay down three propositions. The first is that, in a certain pro-

portion of cases of extra-uterine pregnancy in the early stages, the diagnosis is easy and unmistakable. The second, that in a certain (quite large) proportion of cases, sufficient symptoms are present to more than warrant a diagnosis of extra-uterine pregnancy, such a pregnancy not being present. The third, that in a certain other proportion of cases the symptoms, until rupture has occurred, are entirely wanting or are of such a dubious character as to in no wise warrant such a diagnosis. These propositions have been abundantly sustained by the cases reported to-night. Cases have been reported in which the diagnosis was made and the condition found, and there are enough of these cases on record to show that the diagnosis can be made at times. Then we come to the second group of cases, in which the diagnosis is justified by the symptoms, but something else is found. This I sustained by cases of my own, and it has been more than abundantly substantiated by cases reported here to-night by Drs. Goodell, Hirst, J. Price, M. Price, and Hoffman. Dr. Johnston, of Washington, has reported a similar case. The third proposition is also sustained by cases reported to-night (in addition to my own) by Dr. Hoffman, Dr. J. Price, and others. If there are well substantiated cases in which the diagnosis was not made and extra-uterine pregnancy found; and again, if we operate for extra-uterine pregnancy, the symptoms justifying such a diagnosis, and something else is found, I cannot see how any sensible man can claim that it is possible to make a positive diagnosis. I agree with Dr. Hoffman that Dr. Thomas' cases are utterly worthless from a diagnostic point of view; nor does Dr. Thomas himself hold that it is always possible. The men who claim that a positive diagnosis can be made have most signally failed. For instance, the case of Mann, of Buffalo, which went into the hands of Wylie, who operated and did not find ectopic gestation; the case which Buckmaster, together with other medical talent, treated with electricity, even to puncturing, I think, and finally pronounced normally pregnant; the case of Kelly, of Philadelphia, the diagnosis of which case has to-night been denied by two eye-witnesses, as well as others.

It is noteworthy that the men who claim the most on this subject, have had the least experience.

BOOK REVIEWS.

THE NATIONAL MEDICAL DICTIONARY, including English, French, German, Italian and Latin terms used in Medicine and the Collateral Sciences, and a Series of Tables of Useful Data. By JOHN S. BILLINGS, A.M., M.D., LL. D., Edin. and Harvard, D.C.L. Oxon., Member of the National Academy of Sciences, U. S. A., etc., etc. With the Collaboration of W. O. Atwater, M.D., Frank Baker, M.D., S. M. Burnett, M.D., W. T. Councilman, M.D., James M. Flint, M.D., J. A. Kidder, M.D., William Lee, M.D., R. Lorina, M.D., Washington Mathews, M.D., C. S. Minot, M.D., H. C. Yarrow, M.D. Philadelphia: Lea Brothers & Bo., 1890.

It was fitting that with the advent of the new year a work of such value should be presented to the medical profession. From the exceptional ability of those to whom its preparation had been committed the public had just reason for anticipating the production of a work of unusual merit. We congratulate the editor and his corps of collaborators upon the fact that such anticipations are fully realized. The profession is deeply indebted to the author for this invaluable contribution to American medical literature.

The series of tables, ten in number, with their various subdivisions, published in connection with the work, will be found of great practical value, and evince a wise discrimination of what is most needed in the matter of ready reference. We only purpose at this writing to announce the publication of this great work, and assure our readers that it is within their power to make an invaluable addition to their libraries by the purchase of the National Medical Dictionary. In a later number of THE JOURNAL we shall take occasion to refer more fully to its special merits.

In the publication of the Dictionary the well known firm of Lea Brothers & Co. have fully maintained the credit of a house which for more than two generations has been foremost in the presentation of medical publications. In every department and every detail there is such evidence of skill and exquisite taste as not only to redown to the credit of the house but also to the honor of a prominent American industry.

EATING FOR STRENGTH; OR, FOOD AND DIET IN THEIR RELATION TO HEALTH AND WORK. By M. L. HOLBROOK, M.D., Prof. of Hygiene in the N. Y. Med. College and Hospital for Women; Editor of the *Herald of Health*, etc. New York: M. L. Holbrook & Co. Cloth, Pp. viii, 246. Price $1.00. Chicago: A. C. McClurg & Co.

In this book the various food products are carefully analyzed and compared with a view to pointing out the most eligible articles of diet in both health and disease. The writer is evidently a good deal of a vegetarian and takes particular pains to emphasize the importance of adding largely to our diet the vegetable products, to the partial exclusion of meat, as tending both to the promotion of health and economy. Several hundred recipes for the preparation of foods and bev-

erages are included in the work, which is written throughout in a very instructive and entertaining manner.

THE INTERNATIONAL MEDICAL ANNUAL FOR 1890 is now in press and will shortly appear from the publishing house of E. B. Treat, New York. The prospectus shows a list of thirty-seven editors and gives promise of improved work in the present edition. The volume will give a summary of new remedies arranged in alphabetical order, together with a *résumé* of new treatment and medical progress. The work will doubtless be an important addition to medical literature. It will be published in one volume of 600 pages. Price $2.75, post free.

A CLINICAL ATLAS OF VENEREAL AND SKIN DISEASES, including Diagnosis, Prognosis and Treatment. By ROBERT W. TAYLOR, A.M., M.D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, etc. Illustrated with 192 Figures, many of them Life-size, on 58 beautifully colored Plates. Also many large and carefully executed Engravings through the text. Parts VII and VIII. Pp. 319–427. Philadelphia: Lea Bros. & Co. 1889.

These are the last two numbers of Taylor's superb work and include the following subjects: Scabies, Dysidrosis, Miliaria crystallina, Impetigo contagiosa, Eruptions of Iodic Origin, Bromine Eruptions, Sycosis, Molluscum Sebaceum, Ichthyosis, Leprosy, Lichen Planus, Lichen Ruber, Lichen Ruber Moniliformis, Lupus Vulgaris, Molluscum Fibrosum, Scleroderma, Acne Rosacea, Rhinoscleroma, Elephantiasis, Leucoderma, Chloasma, Alopecia Areata, Keloid and Xeroderma Pigmentosa.

This concludes a work of the greatest value to the general practitioner and surgeon, for by its aid the diagnosis of skin lesions, which is often attended with so many difficulties, becomes comparatively simple and easy. A more helpful work could scarcely be chosen for a physician's library.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Laryngology and Otology.

All those who desire to read papers before the Section of Laryngology and Otology, at the next meeting of the American Medical Association, to be held in Nashville, Tenn., May 20–23, are requested to send the titles of the same to either of the undersigned before February 15, 1890.

JOHN O. ROE, M.D., Chairman,
28 N. Clinton St., Rochester, N. Y.
FRANK H. POTTER, M.D., Secretary,
273 Franklin St., Buffalo, N. Y.

MISCELLANY.

LETTERS RECEIVED.

Dr. H. J. Defrees, Millwood, Ind.; Parke, Davis & Co., Detroit, Mich.; Medical and Surgical Sanitarium, Battle Creek, Mich.; Egan Imperial Truss Co., Ann Arbor, Mich.; Dr. L. Belknap, Battle Creek, Mich.; Dr. A. B. Judson, New York; Dr. J. McGinn, Washington, D. C.; Dr. G. H. Gibson, Denver, Col.; Dr. Walter Wyman, Dr. L. C. Loomis, Washington; Dr. J. H. Manley, Gustave E. Stechert, New York; E. P. Donnell Mfg. Co., Chicago; Fairchild Bros. & Foster, J. Walter Thompson, New York; Dr. Archibald Church, Chicago; Dr. S. A. Skinner, Hoosac Falls, N. Y.; Dr. Dudley P. Allen, Cleveland, O.; Dr. W. C. Owen, St. Louis, Mo.; Mrs. Stinson, Norristown, Pa.; R. A. Robinson & Co., Louisville, Ky.; E. Merck, New York; Mr. M. R. Ledberry, Detroit, Ill.; The Imperial Granum Co., New Haven, Conn.; The Kenyon News and Postal Subscription Co., Chicago; Dr. Wm. W. Pearce, Waukegan, Ill.; Dr. Wm. N. Boerstler, Peninsular, O.; Dr. F. D. Green, Richmond, Ind.; Mrs. E. T. Bruen, Philadelphia; Dr. G. E. Browne, Las Animas, Col.; Medical Press Co., Philadelphia; A. H. Roffe & Co., Boston; McKesson & Robbins, New York; Lambert Pharmacal Co., St. Louis, Mo.; Horlick's Food Co., Racine, Wis.; The Upjohn Pill and Granule Co., Kalamazoo, Mich.; Dr. J. Stout, Ottawa, Ill.; Landa, de St. Sauveur & Co., Chicago; Paris Medicine Co., Paris, Tenn.; Dauchy & Co., New York; Detroit College of Medicine, Detroit, Mich.; Sharpe & Dohme, College of Physicians and Surgeons, Baltimore, Md.; Doliber, Goodale & Co., Boston; Rio Chemical Co., St. Louis, Mo.; Buffalo Med. and Surg. Journal, Buffalo, N. Y.; J. Movius & Sons, I. Haldenstein, New York; Dr. A. B. Campbell, New Holland, Ill.; Dr. N. D. Guerry, Trinity, Miss.; Canton Surgical and Dental Chair Co., Canton, O.; Dr. F. S. Bascom, Salt Lake City, Utah; Dr. S. K. Gifford, Haverford College, Pa.; Dr. S. P. Deahofe, Potsdam, O.; Dr. L. J. King, Visalia, Cal.; Geo. F. Lasher, Philadelphia; Dr. L. C. Swift, Ft. Barrington, Mass.; Worcester District Medical Library, Worcester, Mass.; Dr. W. E. Casselberry, Chicago; Dr. Henry B. Baker, Lansing, Mich.; Chesebrough Mfg. Co., New York; P. W. Garfield, Cleveland, O.; Dr. John Casson, Alexandria, La.; F. B. O'Connor, Brooklyn, N. Y.; New York Post-Graduate Medical School, New York; Battle & Co., St. Louis, Mo.; Dr. A. Palmer Dudley, New York; Dr. J. A. Maloney, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 4, 1890, to January 10, 1890.

By direction of the Secretary of War, ordinary leave of absence for two months is granted Capt. Junius L. Powell, Asst. Surgeon, in extension of the leave of absence on account of sickness granted him in S. O. 258, November 5, 1889, from this office. Par. 1, S. O. 1, A. G. O., January 2, 1890.

By direction of the Secretary of War, leave of absence for six months on surgeon's cestificate of disability, with permission to go beyond sea, is granted Capt. Louis M. Maus, Asst. Surgeon. Par. 13, S. O. 4, A. G. O., January 6, 1890.

First Lieut. Freeman V. Walker, Asst. Surgeon U. S. A. (Jackson Bks., La,), is granted leave of absence for one month on surgeon's certificate of disability. Par. 7, S. O. 5, Div. Atlantic, January 7, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 11, 1890.

P. A. Surgeon Robert Whiting, detached from the "Minnesota" and to the "Dale."

Asst. Surgeon Geo. McC. Pickrell, detached from the "Dale" and to the "Minnesota."

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ORIGINAL ARTICLES.

THE PAST, PRESENT AND FUTURE OF ABDOMINAL AND PELVIC SURGERY.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOSEPH PRICE, M.D.,

OF PHILADELPHIA, PA.

Under this title I purpose to discuss briefly the salient features of pelvic surgery at and before its recognition as a legitimate practice, its aims and accomplishments, as now improved, and the possibilities of its attainments by future perfectionment. My paper shall be neither historical, statistical, nor bibliographical, but shall be a concise statement of facts and practice, and of the lines of improvement as I see them.

Standing, as we now do, amid the wonderful successes of the present surgery, we are prone to accredit nothing to the past save its feeble efforts and frequent failures. This is neither just nor reasonable. Pioneers in every line of work, scientific or mechanical, or both, have the rubbish of ages to clear away, the superstitions of all who preceded them, and the prejudices of those who surround them. No man controlled in his actions or habit of thought by a prejudice, doubts for an instant that it does not protect him from error. Here, then, was the field upon which were fought the first battles of pelvic surgery. The first operators, had they defiled the temple, could have suffered no greater condemnation than was heaped upon them for invading the sanctity of the abdomen. The horns of a mad bull might tear it, but the surgeon's knife must never enter it! The early operators must needs, then, tear down opposition built upon superstition, ignorance and prejudice, and lay the foundations upon which is reared the successes of to-day. Their mistakes made possible our successes; their trials made possible our accomplishments; their failures warn us against errors. The first great advance in abdominal and pelvic work, upon which depended all subsequent successes, was the intraperitoneal treatment of the pedicle. This fact stands out too boldly to necessitate a moment's argument. Then followed the introduction of Listerism, which, fundamentally correct in idea, wrought death by chemicals instead of dirt. Even now this opinion may be disputed; but ere long it will be the rule to keep harmful disinfectants as far away from the abdomen as fetid pus or other filth. It stands proven that cleanliness may be and constantly is obtained without the aid of any chemicals whatsoever. This opinion I have always held, and have never, in any operation of my own, used chemical disinfectants in any form whatever.

Now, as we have learned all this from the experience of our predecessors, so much of our present success is due to the appreciation of early operation, both in obscure disease and well-marked lesions. That "procrastination is the thief of time," and fills unnecessarily many a grave, was too long in being recognized as a surgical maxim. Even yet the "conservative surgeon," conserving his fees while his patient loses her life, hangs upon the skirts of Progress and impedes her strides. Let no man deceive himself into imagining that delay is conservatism. Delay is the fool's paradise, where laggards wait for luck, instead of pluck, to carry them to success. If any man doubts the advantages of early operation in all phases of abdominal and pelvic disease, be he surgeon, general practitioner, or electropathist, I would urge upon him to read Dr. Bantock's "Plea for Early Ovariotomy."

But now that we have learned to operate early, we have come to modify our methods of operating. Formerly the array of instruments marshalled at an abdominal section was appalling to the spectator and confusing to the surgeon; several tables did not suffice to hold them; their names could be held only by the maker's catalogue, ranging, as they did, from the vaccine scarifier to the amputating knife. Now the rule is simplicity; the fewer the instruments, the less is the chance for dirt and confusion, and the greater that for speed. By speed I do not mean haste and hurry. Quick, earnest, thorough work, with no time lost in discussing pathology and specimens, no considering of methods, no delay over the less important portions of the operation, are vast factors in obtaining good results. We have now not only learned to work, but to recognize what is best done and what is best avoided as a rule.

Formerly "death by peritonitis" was a constant report after section. No cause could be assigned in many instances. Finally it was divined that three causes were at work giving these bad results: Hæmorrhage from adhesions, hæmorrhage from badly tied ligatures, and an imperfectly cleansed abdomen and pelvis. This discovery brought into use the drainage tube and pelvic irrigation, which at the present time has advanced to absolute flushing with a gravity tube. I can not too strongly urge upon operators the value of this in washing up débris from the pelvic cavity, that otherwise would remain to infect the patient. Notwithstanding the cry of alarm lately raised by a French operator as to the procedure, his fears can be passed over as groundless and the practice confidently recommended as harmless and indispensable to perfect results in many cases. Cleanliness, water and good surgery are the very best of all antiseptics.

Now, as débris was found to be the cause of many bad results, so hæmorrhage from bad tying of the pedicle was the cause of great mortality. This led to careful investigation of the after-conduct of both ligature and stump. It was found that the stump did not slough, but organized, and that the ligature became encysted. This fortified the practice of leaving a good button without fear, and led to the employment of as small a ligature as possible; or, rather, it is now leading to this. Great or heavy ligatures are dangerous in being less likely to tie well, and in being less apt to become encysted.

The treatment of incipient peritonitis as now generally adopted by abdominal surgeons, if practiced by the general profession, would be a distinct advance in general medicine. I refer to the use of saline purgation, or, if that is impracticable, to the free use of small doses of calomel. The efficacy of this treatment is so well attested that no man should hesitate to use it in threatening cases, general or surgical. Experience has shown that violent attacks of peritonitis, almost or quite general, will yield to this treatment, though the attack may be due to breaking pus-tubes; the abdomen, painful to the lightest touch and tight as a drum, will become soft and natural. The opiate treatment can give no such showing as this.

From the standpoint of present knowledge the causation of pyosalpinx as related to gonorrhœa is worthy of distinct mention. With its after-effects in view, gonorrhœa in women must receive much more careful treatment in the future than it has in the past. It has been regarded in the female as a disease of only the slightest importance; henceforth it must be considered as being the possible cause of the most serious pelvic disease found in women. Only those fail to recognize this fact who blindly follow tradition or refuse to face facts.

Another pelvic disease whose treatment is revolutionized, and whose surgery now remains to be written, is perityphlitis, simple or complicated with appendicitis. Heretofore the treatment has been tentative; now it is positive and radical, displacing weeks of suffering by speedy cure. The surgery of intestinal obstruction needs in great part re-writing in most of our text-books. Patients are no longer permitted to die of volvulus, stab or gun-shot wounds. Within the last year Senn's hydrogen test has been a giant stride in diagnosis, while the treatment, now that anastomosis offers a comparatively simple measure for serious lesions, will be much safer.

But while there has been a positive advance in the lines indicated, even during the last few months in other directions, there has been a positive retrogression. I refer to the attempted substitution of electricity for positive surgical interference in abdominal and *pelvic* disease. Like all other novelties and promised cure-alls, electricity has gathered about it men who have failed, men who are fearful, by reason of the bad results of others, and men who reach out for any treatment that promises the most with the least trouble and worry. Pelvic surgery is not play, nor should those who are children mentally attack it. If there be a better treatment than the knife for the numerous pelvic troubles we have to deal with, we should welcome it as lessening our work and adding to our days.

What I demand of the electrical claimants is to furnish proof of their results. When I am called finally to operate upon a patient who has been for weeks under the treatment of currents and counter-currents, and find her no better and her adhesions reduced not one jot, not only no better, but worse, must I accept the reports of cures in identical cases simply on the affirmation of enthusiasts, often incapable of making a correct diagnosis?

Positive surgery is sure of its ground, knows what it can accomplish by what it has done, and refuses to yield its vantage on mere theory and mere assertion. To a man who has had some measure of surgical success these electropaths exclaim: "Not every one can expect such results, nor can every one do pelvic surgery; something must be left for the average surgeon." Flattering to the true surgeon as this may seem, it is revolting. The same argument would justify counterfeiting. Again they say: "Electricity is in its infancy in application; we do not know its possibilities, nor its limitations." If there is any limitation to its results, as claimed, I, for one, would like to know them. Two or three conditions are certainly all for which it has not been claimed as a remedy in abdominal or pelvic surgery. For an infant its prowess and accomplishments are most wonderful. That some successful surgeons have identified themselves with this

treatment is no argument for its general acceptance. Practitioners from the regular school have deserted to homœopathy, yet the vast majority of us believe that homœopathy is a delusion. So with electricity; Keith may advocate it, yet this does not prove Keith's surgery a failure, nor the abandonment of his art a logical proceeding. His success in the surgery of fibroid tumors was marvellous, considering the kind of cases he dealt with. Electricity has no conquests to boast with such cases as these. The error is in supposing that hysterectomy for minor tumors is as fatal as in Keith's terrible cases, and that because electricity is capable of producing electrolytic effects outside of the body on small growths, it is capable of acting within the body, where the strength of the current is necessarily limited and the resistance great.

In the light of all this we must demand positive proof, all the more because those who apply the treatment are not in harmony as to the reason for the results claimed. Some affirm it is the electrolytic effects, while others hold to the mechanical result of puncture to originate a change that then goes on of itself. Again, some maintain that the action of the current is simply peripheral, while others insist upon a through-and-through action by reason of a "transport of elements." Such a divergence in essentials must be reconciled in any theory before it can be recognized as scientific. All I need say of this plan of destroying and curing a variety of diseases is that it has many drawbacks, and is so inferior to other and established methods that it should never be adopted; the results are strictly unsatisfactory.

Leaving this matter, I must refer briefly to the surgery of ectopic gestation. In no other fatal accident has the treatment undergone such a change as in this. After rupture there is no question as to treatment. Tait's wonderful success has established the rule: *Open the abdomen, tie the broad ligament, clean out the peritoneum, and drain.* There is no uncertainty as to the treatment of this murderous accident. All other methods are unscientific and crude in comparison with this, the safest and most perfect of our surgical triumphs. Before rupture we are again confronted by the electrical theorists, who here, as before, claim more than they prove. It is worthy of comment that, with few exceptions, the men who work entirely outside of the abdomen are most skilful in diagnosticating internal troubles. I believe I am safe in saying that not one-fourth of the cases diagnosticated as ectopic gestation, cured by electricity, have ever been verified; while it is a well-known fact that most of all the cases primarily judged ectopic either turn out normal, or else are not pregnancies at all. While this is so, neither the value of electricity as a feticide, nor the after-results of its application, can be intelligently discussed.

One other operation requires notice. I refer to the so-called improved Cæsarean section. The success of this operation as now practiced is largely due to the same factors of improvement as make other abdominal operations less fatal when compared with earlier attempts. Sænger's introduction of the peritoneum into the line of suture need not be considered as really indispensable, as he himself admits its omission when there is no marked contraction of the peritoneum, nor bulging of the uterine tissue. It is questionable whether any Cæsarean section should be done without entire removal of the uterus, thereby saving the mother the danger of a second operation. The removal of the pregnant uterus, besides being a speedier operation, is a safer one. It is right, I think, to give the mother the benefit of every chance.

Briefly considered, the future of abdominal surgery must, so far as improvement is concerned, rely on such steps as will simplify technique and render operation still speedier. That a better anæsthetic than ether may be discovered, or a means by which chloroform may be safely used, is an end earnestly to be desired.

In intestinal operations the general ability to apply sutures and resect rapidly must be the requirements of success. Too many failures in intestinal suturing is the greatest cause of mortality in these cases.

EPILEPSY CAUSED BY INTRA-NASAL DISEASE.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY FRED. S. CROSSFIELD, M.D.,
OF HARTFORD, CONN.

Within a few years certain nervous phenomena, the causes of which have not been positively ascertained, or have been attributed to other organs, have finally been traced to some existing disease within the nasal passages or pharynx.

Hay fever, or hyperæsthetic rhinitis, manifests itself in a hyperæsthesia of the mucous membrane of the nose, or in an irritable condition of the nerve filaments distributed to this membrane. The existence in the nose of well-defined sensitive areas has been demonstrated. The application of the galvano-cautery to these spots is often successful in permanently curing this distressing disease.

Since the report of a case of asthma from intra-nasal disease by Voltolini in 1871, numerous other cases of a like nature have been reported from time to time by various observers. I have no doubt, as time goes on and nasal surgery becomes more thoroughly and generally understood, we shall be able to trace other nervous phenomena heretofore mysterious to pathological malformations of the nose or naso-pharynx.

In February, 1886, a young man consulted me

with the following history: Nationality, American; age, 20; occupation, an accountant; habits faultless. He was considerably emaciated, complexion sallow, had a hacking cough, which at night became paroxysmal and so severe as to greatly interfere with sleep. Headache almost constantly, night sweats occasionally, appetite varying, but most of the time poor. For six years had an epileptic seizure about twice a month, sometimes oftener. The family history was exceptionally good. He was very ambitious, but had no confidence in himself whatever. He shunned society, did not dare to go into any public gathering; seemed to be in constant apprehension.

During these six years he took bromides in some form most of the time, with cod liver oil, hypophosphites, and various cough mixtures, without any apparent benefit. Having exhausted about every known means for relief, he was sent to me, with the above history. He thought he had consumption, and his general appearance indicated it. His chest expansion at this time was but 1½ inch. By the most careful and painstaking examination of the lungs, I found nothing to warrant the suspicion of consumption.

Large and small mucous râles were heard indistinctly on both sides of the chest; they were inconstant and changeable as to situation. Heart normal. The epileptic attacks being the most distressing trouble, and increasing in frequency, I very naturally directed my attention to this condition. But notwithstanding the administration of bromides in various doses, with good tonics and nutritious diet, the attacks occurred with about the same regularity, and became rather more severe in character.

In one of his visits to my office the young man seemed to be breathing with some difficulty. Upon close questioning, I ascertained that for years he had breathed almost entirely through the mouth. Becoming habituated to the habit it gave him no great discomfort. He remarked that he never should have thought of consulting me for that, as he could not remember ever breathing any other way.

Examination of the anterior nares showed: right side, marked hypertrophy of the inferior turbinated body, with almost complete stenosis. Left side, marked deviation of the septum, with some exostosis in the form of a sharp angle, which pressed against the inferior turbinated body, which was also considerably hypertrophied. The mucous membrane throughout a deep reddish hue, and bathed with a muco-purulent secretion which was abundant, especially in the left nostril. The exostosis and deviation of the septum to the left, leaving a space beneath, permitted more air to pass through the left nares. The hearing being nearly normal showed that the orifices of the Eustachian tubes were not encroached upon to any great extent. Examination of the posterior nares showed a mass of hypertrophied adenoid tissue of the naso-pharynx. I have never seen a more marked case of enlargement of the pharyngeal tonsil. The membrane of the pharynx presented a granular appearance, venous engorgement giving the parts a deep reddish color. There was some thickening and elongation of the uvula and also slight enlargement of the tonsils. All of these changes more marked upon the right side. Hoarseness was rarely present in this case. The pathological changes in the larynx were found to be slight. There was some venous congestion with very slight enlargement of the epiglottis. I have given the pathological changes somewhat at length to show how little discomfort is caused in some instances by conditions which, in their ultimate effects are often serious.

I removed the hypertrophied membrane of the inferior turbinated bodies on both sides with the galvano-caustic suare, and afterwards a portion of the right inferior turbinated bone with the Bucklin saw. The exostosis of the septum on the left side was also removed with the nasal saw. Finding the left nasal space still too contracted I straightened the deviation of the septum by means of Steels, punch and forceps. The adenoid growth in the naso-pharynx was removed entirely in three operations with the pharyngeal cutting forceps. As a result of this treatment the general health began to improve rapidly. The cough ceased, the appetite returned. In six months the patient gained 20 lbs. in weight. Has had but one epileptic seizure, and that occurred during the first treatments. It is now three years since the last treatment and he is perfectly well, and has had no more epilepsy whatever. His chest expansion is 4 inches and his nasal breathing is perfect.

The second case came to my notice in December, 1888. The patient, a young man 17 years old, was well nourished, full blooded and rather large for his age. Had epilepsy since the age of 9 or 10. His general health had not suffered materially. This patient, like the first, had been under treatment for his epilepsy constantly, with no apparent benefit. Without going into the particulars of this case I will simply say, that there was absolute nasal stenosis with the consequent oral breathing. The nasal septum was quite straight. The right and left inferior turbinated bodies were hypertrophied, filling the cavities. There was some enlargement of the pharyngeal tonsil, but not enough to require surgical interference. The pharynx as a whole was very little implicated, and the larynx not at all. The epileptic seizures were frequent, occurring two or three times a week, and occasionally one or more a day. The hypertrophied membrane of the turbinated bodies was thoroughly removed with the cautery loop and knife. After the first operation the fits were less frequent. Am sorry to say this case passed out of my hands. His

family moved away, and I have not since seen him. But at last accounts he had had no fits for eight weeks. He had never gone that length of time before without several attacks.

In the past few years much of the misery of this world has been laid to the organ of smell, and justly too, no doubt, in many cases. That epilepsy has other causes goes without saying, but the favorable result of the treatment in the first case, with the entire disappearance of the conditions named, and the unmistakable improvement in the second, is proof without any reasonable doubt that, in these cases at least, the condition found in the nares and naso-pharynx was accountable for it all. If in these two cases why not in others?

Since the completion of this paper I have ascertained through the brother of the patient referred to in case No. 2 that the young man had a very slight convulsion immediately after removing from town, about a week after the last operation, since which time there has been no recurrence. It is now about five months since the last convulsion.

EPIDEMIC INFLUENZA.

Read before the St. Louis Academy of Medicine.

BY WILLIAM PORTER, M.D.,

PROF. LARYNGOLOGY AND DISEASES OF THE CHEST IN THE COLLEGE OF PHYSICIANS AND SURGEONS, ST. LOUIS.

Mr. President and Fellows of the Academy: In compliance with your request to open the discussion upon this subject, I find myself somewhat at a disadvantage. The absence of reliable statistics regarding the prevalence and progress of this now wide-spread disease makes its exact study somewhat difficult. Doubtless many cases have been reported as of epidemic origin which were but ordinary catarrhal conditions, and certainly the number of cases in many localities has been greatly exaggerated.

After making due allowance for error there is little doubt but that a very large proportion of the population of cities visited by the epidemic become its victims. This fact alone justifies a close examination of the clinical history of this disease, but there is an additional incentive to such investigation from the knowledge we have that while epidemic influenza is not in itself a grave disease, yet its complications and the sequences are sometimes most important.

It is interesting to note that several forms of epidemic disease are now existing in the old world. Cholera is now reported to be ravaging Persia at Hamadan, advancing towards Teheran and Kurdistan, thus threatening Eastern Europe. Dengue, (father of the knees, as the Arabs say), well known in its epidemic form in this country, has been epidemic along the eastern coast of the Mediterranean since August. Dr. Glover, the attending physician to St. John's hospital in Beyrout, Syria, writes that at the latter place 75,000 of the 100,000 population have suffered from dengue during the last five months. Many of the symptoms which he finds in the epidemic are similar to those seen in the earlier stages of influenza. There is a chill, followed by fever, and severe pains in the knees and back, and headache and sometimes swelling about the throat. Catarrhal opthalmia is a frequent complication, though the marked catarrhal conditions of epidemic influenza are absent.

Is there more than a coincidence in the fact that influenza is epidemic in Russia and has rapidly advanced westward through Europe to America, while cholera is, as the *Lancet* states, threatening Europe through the familiar Caspian channels and epidemic dengue has extended from Alexandria to Constantinople?

There is something suggestive in the date of the outbreak of these three epidemics. As nearly as I can learn, the cholera in Persia only attained much headway late in the past summer, the epidemic of dengue in September, and the first cases of influenza were noted in St. Petersburg in October. While these diseases are clinically distinct, yet as far as we know have we not in the date of origin, the general prevalence and westward advance of each a reasonable premises for the hypothesis that there is a common climatic or atmospheric factor which influences their progress and direction?

The history of epidemic influenza has been repeatedly given during the last few months in the columns of both the medical and daily press, so that I need not detain you long in here reviewing it. Nearly all the accounts seem to be founded upon a book published in 1848 by Dr. T. B. Peacock, of the Royal Free Hospital, London, entitled "The Epidemic Catarrhal Fever of 1847 and 1848," or taken from a later article by the same author in Quain's Dictionary of Medicine.

Through the courtesy of Dr. A. S. Barnes I am able to present to you a book which antedates that of Dr. Peacock by more than half a century, in which our subject is treated with an exactness that would do credit to any observer of the present day.

"The First Lines of the Practice of Physic," by William Cullen, M.D., of Edinburg, was published 1792. I quote from his second volume, section 1061–1063:

"There are two species of catarrh. One of these, as I suppose, is produced by cold alone, as has been explained above; and the other seems manifestly to be produced by specific contagion. Of such contagious catarrhs, (these epidemical catarrhs have been lately termed influenzas), I have pointed out many instances occurring from the 14th century down to the present day. In

all these instances the phenomena have been much the same, and the disease has always been particularly remarkable in this, that it has been the most widely and generally spreading epidemic known. It has seldom appeared in any one country of Europe without appearing successively in every other part of it; and in some instances it has been even transferred to America, and has spread over that continent, so far as we have had opportunities of being informed

"The catarrh from contagion appears with nearly the same symptoms as those mentioned (1047–1049). It seems often to come on in consequence of the application of cold. It comes on with more cold shivering than the catarrh arising from cold alone, and sooner shows febrile symptoms, and these likewise in a more considerable degree. Accordingly it more speedily runs its course, which is commonly finished in a few days. It sometimes terminates by a spontaneous sweat; and this in some persons produces a miliary eruption. It is, however, the febrile state of this disease especially that is finished in a few days; for the cough, and other catarrhal symptoms do frequently continue longer, and often, when they appear to be going off, they are renewed by any fresh application of cold.

Considering the number of persons who are affected with catarrh, of either the one species or the other, and escape from it quickly without any hurt, it may be allowed to be a disease very free from danger, but it is not always too be considered as such; for in some persons it is accompanied with pneumonic inflammation. In the phthisically disposed it often accelerates the coming on of phthisis; and in elderly persons it frequently proves fatal."

Is not this classical description by a master mind worthy of attention, especially when we remember how comparatively limited were the opportunities a century ago for such collective researches as are needed in the study of all epidemic diseases. From the 14th to the 18th century many epidemics of catarrhal fever are spoken of by the older writers, and we have the records of nine which occurred in the 18th, and four in the first half of the present century. The epidemic of 1782 extended all over every country of Europe, affecting more than one-half of the inhabitants and frequently proving fatal.

The present epidemic seems to have been more rapid in its progress from country to country than any of its predecessors. Some believe this due to the more rapid means of travel in these days.

This brings up the unsettled question of its etiology. Is the present disease contagious or is it due to miasmatic influence? The answer may not yet be positively given. The equal distribution of the disease has prevented the entire relegation of its cause to the idea of contagion, and the rapid spread and transitory effects of the causative agent suggests a miasm. It is true that Cullen believed that this form of influenza is disseminated by contagion, but as Tanner pointed out in discussing the epidemic of 1833, "the influenza pervaded a large tract of country in a manner much too sudden and simultaneous to be consistent with the notion that its prevalence depends exclusively upon any contagious properties that it may possess." He adds: "The occurrence of epidemic catarrh is unquestionably connected with some particular state or contamination of the atmosphere."

In harmony with the proposition let me refer to a statement in the third volume of the "Transactions of the College of Physicians." On May 2, 1782, Admiral Kempenfelt sailed from Spithead with a squadron, of which the Goliah was one. The crew of that vessel were attacked with influenza on May 29, and the rest were at different times affected; and so many of the men were rendered incapable of duty by this prevailing sickness that the whole squadron was obliged to return into port abont the second week in June, not having had communication with any shore, but having cruised solely between Brest and the Lizard. This happened in one part of the fleet. In the beginning of the same month another large squadron sailed, all in perfect health, under Lord Howe's command, for the Dutch coast. Towards the end of the month, just at the time therefore, when the Goliah became full of the disease, it appeared in the Rippon, the Princess Amelia, and other ships of the last-mentioned fleet, although there had been no intercourse with the land. Similar events were noticed in the epidemic of 1833.

The curious will find much more of interest upon this subject in these "Transactions" in Cullen's "Nosology;" in the *London Medical and Physical Journal*, volumes IX and X; in the compilations of Dr. Hancock in the "Cyclopædia of Practical Medicine," and in the further discussion by Tanner in his "Practice," volume II, page 39, *et seq.*

Let me here offer the proposition already hinted at, that the dissemination of all far-reaching epidemics does not depend alone upon contagion, and that there may be a causative factor common to all epidemics. Gairdner's observations, as quoted by Flint, "go to show that during the prevalence of influenza other diseases are unusally severe, and the rate of mortality from all diseases is increased." The reports from the large cities affected by the present epidemic seem to confirm the statement.

The symptoms of epidemic influenza are now quite well understood by every physician who is in any sense a student. A sudden attack, a chill, more or less complete, a succeeding fever, frequently severe pains, general prostration, more or less dryness of the throat and nares, often followed

by free catarrhal secretions, with convalescence in from five to seven days, is perhaps an outline of the average case.

Many variations are seen, generally dependent, I believe, upon personal characteristics of the patient. In some instances the nervous symptoms predominate, and while the respiratory and digestive tracts seem unaffected, there are neuralgic pains most intense, resembling those of dengue. These, according to St. Petersburg authorities, are sometimes erroneously thought to be incipient typhoid fever cases.

A large proportion of the cases exhibit catarrhal changes of the naso-pharynx, larynx, and bronchial tubes. These are cases in which I believe there is the most danger of serious complications, such as capillary bronchitis in the young, and catarrhal, and even croupous, pneumonia in the aged. The inflamed mucous membrane of the respiratory tract, denuded of its epithelium, offers slight resistance to diphtheritic germs. I have recently seen a very severe attack of diphtheria suddenly develop in a child that had not fully recovered from influenza, and I think we shall see more of such cases in our city.

A number of authors speak of a variation of influenza in which the gastric symptoms are severe, where there is more or less jaundice and sometimes persistent vomiting. I have seen but one such case, and it was scarcely typical. Notwithstanding the severity of the symptoms in this class of cases, the record is that most of them do well.

In the ordinary case of epidemic influenza the prognosis is favorable, exceptions being those in which serious complications arise or disastrous sequela result. The average patient is well in a week. The danger from influenza is more in the complications than in the disease itself, and the increased death rate during the epidemic must necessarily put every careful physician upon his guard in the care of such cases.

The treatment of this disease depends largely upon the special symptoms as they arise. In brief, let me mention the use of acetanilide to quiet the patient and reduce the temperature, combined with quinine, in all cases where the fever is persistent. If the pains simulate those of rheumatism, one of the salicylates, preferably the salicylate of ammonia, in full and repeated doses. I have not hesitated to order sponging with tepid water where the skin has been hot and dry, and have, in several instances, used pilocarpine to meet the same indications; but such a remedy should be used very carefully where there is much depression. The administration of belladona in repeated one-drop doses of the tincture gives a most happy result in those cases where there is excessive secretion from the mucous membrane of the upper air passages, or atropia may be used instead of the belladona. This drug should not be pushed until its toxic effects are produced, but only as a stimulant to the vaso-motor nerves.

Some cases, especially those in which there is gastric irritability or hepatic fault, administration of a mercurial is demanded in small doses once or twice repeated. All depressing agents should be avoided, simple nutritious diet should be used, and after the acute symptoms have passed, I have thought it best to substitute a good tonic for all other medication.

I am not aware that much dependence has been placed in any plan of prophylaxis, but if protection can be afforded it will probably be by the use of small doses of quinine and the avoidance of exposure and fatigue. I have not much faith in the use of sulphurous acid fumes or the inhalation of eucalyptol and similar agents.

I need scarcely add in closing that in this, as in all other diseases, we should not be over-zealous in our medication. Just enough of the proper agent—not too much—to meet the indications. The condition is in itself self-limiting; it is better judgment to care for the symptoms than to attempt to cut short the disease.

2830 Locust St., St. Louis.

Contagious Balano-Posthitis.—Bataille and Berdal have reported to the Société de Biologie, of Paris, a contagious variety of balano-posthitis, which is characterized as follows:

1. Clinically by special erosions of crescentic shape with the convexity toward the meatus. These are limited by a delicate whitish border, which is extremely friable, somewhat elevated, and turned outward. The erosion extends eccentrically, its external border gaining little by little upon the healthy epithelium, while its internal border sloughs so that the more it extends the larger the ulceration becomes. In the circular manner of its spread this form of balano-posthitis is comparable with certain circinate parasitic affections of the skin.

2. Experimentally it is recognized by its contagious and inoculable properties. The authors have in fact succeeded in reproducing a series of the erosions which they describe by means of the inoculation of pus with the lancet. The authors propose to make a further communication, giving the results furnished by pus cultures and determining the character of the pathogenic agent.

The virulent contagious and specific character of the balano-posthitis furnish a sufficiently well-defined morbid entity, and one which should have a place among the venereal diseases, properly so-called.—*La Sem. Méd.*

Dr. H. Newell Martin, of the Johns Hopkins University, has been elected President of the American Society of Naturalists.

TABLES, AND DIAGRAMS REPRESENTING THE SAME,

ACCOMPANYING A PAPER ENTITLED

THE CLIMATIC CAUSATION OF CONSUMPTION.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HENRY B. BAKER, M.D.,

OF LANSING, MICH.

CROUP AND TEMPERATURE IN MASSACHUSETTS.

TABLE 1.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *croup* in *Massachusetts* during 23 years, 1863-85, in comparison with the average *atmospheric temperature* for 48 years[1] (1790—1870) at Cambridge, Mass. Deaths computed from the 44th Registration Report of Massachusetts, 1886; and the temperature is taken from the Smithsonian tables, "Distribution and Variations of Atmospheric Temperature," 1876, p. 40.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Deaths.[2]	1,469	1,290	1,181	1,023	774	559	427	435	729	1,239	1,649[3]	1,631
Av. temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[1] The series is stated as follows: "Begins Jan. 1790; ends Dec. 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and, therefore, most likely to give the correct "normal" curve. That it does supply a correct "norm," and that, in table 2 and diagram No. 2, the normal curve representing absolute humidity is shown, is made evident by a comparison of the curve for temperature in diagram No. 1 with the curve for absolute humidity in diagram No. 2, noting how closely the two curves resemble each other, and considering how completely the absolute humidity of the atmosphere is controlled by the atmospheric temperature. The two curves are so nearly alike that it has been thought not necessary to make any more diagrams exhibiting the absolute humidity in Massachusetts, but to let the curve representing the temperature—the controlling condition—stand also as representing the absolute humidity.

[2] Total deaths from croup in the 23 years, distributed by months.

[3] To the author of this essay it seems probable that some proportion of the deaths recorded as from croup were from diphtheritic croup, and also that some part of the rise in the autumn, after the opening of the schools, may be due to the spreading of that communicable disease.

CROUP AND ABSOLUTE HUMIDITY IN MASSACHUSETTS.

TABLE 2.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *croup* in Massachusetts during 23 years, 1863-85, in comparison with the *average absolute humidity* of the atmosphere at Boston during 17 years, 1870-86, computed from the tables on *relative* humidity and *temperature*, in the Report of the Chief Signal Officer, U. S. A., for 1886.[4]

	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
Deaths[5]	1,469	1,290	1,181	1,023	774	559	427	435	729	1,239	1,649	1,631
Abs. Humidity. .	1.39	1.45	1.87	2.32	3.37	4.81	5.78	5.66	4.56	3.19	2.19	1.59

[4] That this supplies satisfactory data concerning the absolute humidity of the atmosphere in that vicinity is made probable by the steadiness of the curve, as may be seen in diagram No. 2, and especially by a comparison of that curve with the one representing the atmospheric temperature at Cambridge, Mass., in diagram No. 1.

[5] Total deaths from croup in the 23 years, distributed by months.

CONSUMPTION AND TEMPERATURE IN MASSACHUSETTS.

TABLE 3.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *consumption* in Massachusetts during 23 years, 1863-85, in comparison with the *average atmospheric temperature* for 48[6] years (1790—1870) at Cambridge, Mass. (Deaths computed from the 44th Registration Report of Mass., 1886; and the temperature is taken from the Smithsonian tables, "Distribution and Variations of Atmospheric Temperature, 1876," p. 40.)

	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
Deaths[7]	9,888	10,261	10,723	10,658	10,390	9,223	9,273	9,773	9,875	9,606	9,590	9,607
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[6] The series is stated as follows: "Begins Jan , 1790; ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and, therefore, most likely to give the correct normal curve.

[7] Total deaths from consumption in the 23 years, distributed by months.

SMALL-POX AND TEMPERATURE IN MASSACHUSETTS.

TABLE 4.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *small-pox* in Massachusetts during 23 years, 1863-85, in comparison with the average *atmospheric temperature* for 48 years[8] (1790-1870) at Cambridge, Mass. Deaths computed from the 44th Registration Report of Massachusetts, 1886; and the temperature is taken from the Smithsonian Tables, "Distribution and Variations of Atmospheric Temperature," 1876, p 40.

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
Deaths[9]	458	314	269	270	295	202	177	111	152	214	311	489
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[8] The series is stated as follows: "Begins Jan., 1790, ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and therefore most likely to give the correct normal curve.

[9] Total deaths from small-pox in 23 years, distributed by months.

DIPHTHERIA AND TEMPERATURE IN MASSACHUSETTS.

TABLE 5.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *diphtheria* in Massachusetts during 23 years, 1863-85, in comparison with the *average atmospheric temperature* for 48 years[10] (1790-1870), at Cambridge, Mass. (Deaths computed from the 44th Registration Report of Mass., 1886; and the temperature is taken from the Smithsonian Tables, "Distribution, and Variations of Atmospheric Temperature, 1876," p. 40.)

	Jan.	Feb.	March.	April	May	June.	July	August	Sept.	October.	Nov	Dec.
Deaths[11]	2,527	2,174	1,825	1,736	1,643	1,588	1,365	1,284	1,818	2,598	2,712	2,687
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[12] The series is stated as follows: "Begins Jan., 1790; ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and therefore most likely to give the correct normal curve.

NOTE.—The opening of Schools in the autumn may have to do with the increase culminating in November.

[11] Total deaths from diphtheria, in 23 years, distributed by months.

PNEUMONIA AND TEMPERATURE IN MASSACHUSETTS.

TABLE 6.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *pneumonia* in Massachusetts during 23 years, 1863-85, in comparison with the *average atmospheric temperature* for 48 years[12] (1790-1870), at Cambridge, Mass. (Deaths computed from the 44th Registration Reports of Mass., 1886; and the temperature is taken from the Smithsonian Tables, "Distribution, and Variations of Atmospheric Temperature, 1876," p. 40.)

	Jan.	Feb.	March.	April.	May.	June.	July	August.	Sept	October	Nov.	Dec
Deaths[13]	6,048	6,791	7,042	6,508	4,967	2,776	1,828	1,514	1,913	2,767	4,125	5,221
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[12] The series is stated as follows: "Begins Jan., 1790; ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 are omitted. This series is used because it is the longest available, and therefore most likely to give the correct normal curve.

[13] Total deaths from pneumonia, in the 23 years, distributed by months.

SCARLATINA AND TEMPERATURE IN MASSACHUSETTS.

TABLE 7.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *scarlatina* in Massachusetts during 23 years, 1863-85, in comparison with the *average atmospheric temperature* for 48 years[14] (1790-1870), at Cambridge, Mass. (Deaths computed from the 44th Registration Report of Mass., 1886; and the temperature is taken from the Smithsonian Tables, "Distribution, and Variations of Atmospheric Temperature, 1876," p. 40.)

	Jan.	Feb.	March.	April.	May.	June.	July	August.	Sept.	October.	Nov.	Dec
Deaths[15]	2,340	2,253	2,313	2,209	2,017	1,655	1,224	1,026	953	1,247	1,704	1,964
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[14] The series is stated as follows: "Begins Jan., 1790; ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and therefore most likely to give the correct normal curve.

[15] Total deaths from Scarlatina, in 23 years, distributed by months.

TEMPERATURE AND SICKNESS FROM PNEUMONIA IN U. S. ARMIES.

TABLE 8.—Exhibiting by months for a series of years the average atmospheric temperature at six stations representing approximately the latitude and longitude of the Aggregate forces of the Armies of the United States in the war of the Rebellion, in comparison with the average number of cases of *sickness* from *pneumonia* per 10,000 ("mean strength") of those forces, by months of uniform length) during the four years, 1862-65.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Cases per 1,000 of Mean Strength	38.1	41.7	38.1	28.4	15.9	10.5	8.1	7.2	7.7	14.1	23.8	29.1
Average Atmospheric Temperature.	36	38	45	54	66	74	78	76	69	56	46	38

SICKNESS FROM CONSUMPTION IN WHITE TROOPS, U. S. ARMY, AND TEMPERATURE.

TABLE 9.—Exhibiting, by months reduced to uniform length—30 days each—for the four years, 1862-65, the average number of *cases* of *consumption* per 10,000 soldiers ("mean strength") of the white troops of the U. S. Army in the war of the Rebellion, in comparison with the *average atmospheric temperature* at six stations representing approximately the latitude and longitude of the aggregate forces of the Armies of the United States.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Aver. cases per 10,000 of Mean Strength	5.63	5.95	5.92	5.08	4.33	4.52	4.69	4.59	4.02	4.26	4.47	4.51
Average Temperature at Six Stations. .	31	38	45	54	66	74	78	76	69	56	46	38

DEATHS FROM CONSUMPTION IN WHITE TROOPS, U. S. ARMY, AND TEMPERATURE.

TABLE 23.—Exhibiting, by months reduced to uniform length—30 days each—for the four years, 1862-65, the average number of *deaths* from *consumption* per 100,000 soldiers ("mean strength") of the white troops of the U. S. Army in the war of the Rebellion in comparison with the *average atmospheric temperature* at six stations representing approximately the latitude and longitude of the aggregate forces of the Armies of the United States.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug	Sept.	Oct.	Nov.	Dec
Av. No. of Deaths per 100,000 of M. Str.	19.55	22.47	24.23	19.03	17.00	16.07	17.38	15.75	14.96	17.62	17.13	18.66
Av. Temperature at Six Stations. . . .	36	38	45	54	66	74	78	76	69	56	46	38

SICKNESS FROM DIPHTHERIA IN MICHIGAN, AND TEMPERATURE.

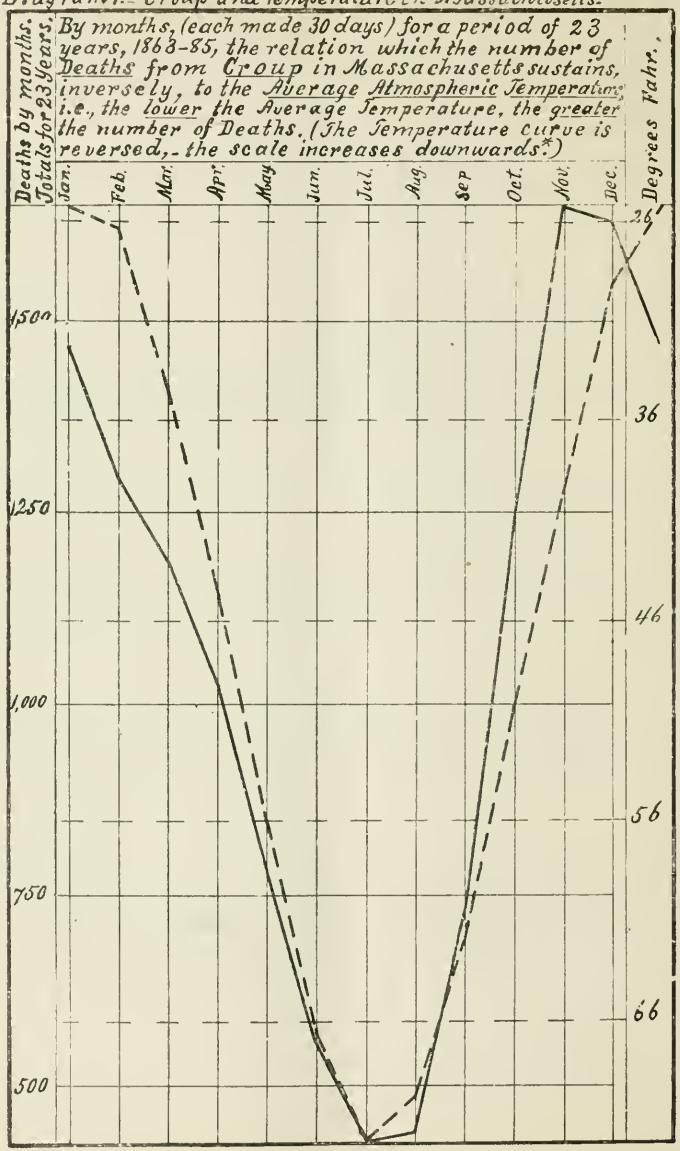
TABLE 24.—Exhibiting by months for a period of nine years, 1877-85, the relation of *sickness* in Michigan from *diphtheria* to the *average atmospheric temperature*.

	Jan.	Feb.	Mar.	April.	May	June.	July	Aug	Sept	Oct.	Nov.	Dec.
Per cent. of Weekly Reports.	29	25	22	21	18	16	15	16	19	27 [16]	30 [16]	29
Average Temperature.	20.77	23.89	29.76	44.14	56.23	65.30	70.73	68 23	61 73	50.72	36.23	27 28

[16] It would seem possible that this sudden great increase of sickness from diphtheria may, in part, be due to the spreading of the disease incident to the opening of schools in the autumn.

NOTE.—Data for this table and the diagram illustrating it are found in Exhibit XIII, p. 122, and in the upper line of Exhibit V, p. 24, Annual Report of the Michigan State Board of Health, for 1886.

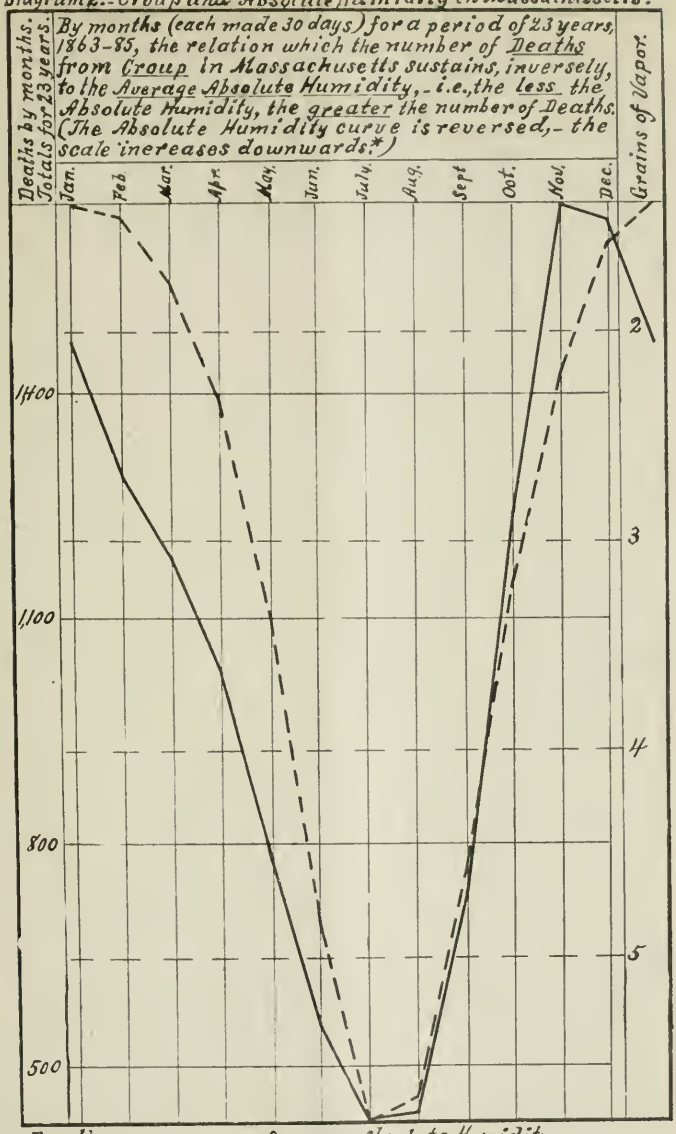
Diagram 1.- Croup and Temperature in Massachusetts.



Deaths _____. Average Temperature — — —.

* The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years, between 1790-1870 at Cambridge, Mass.

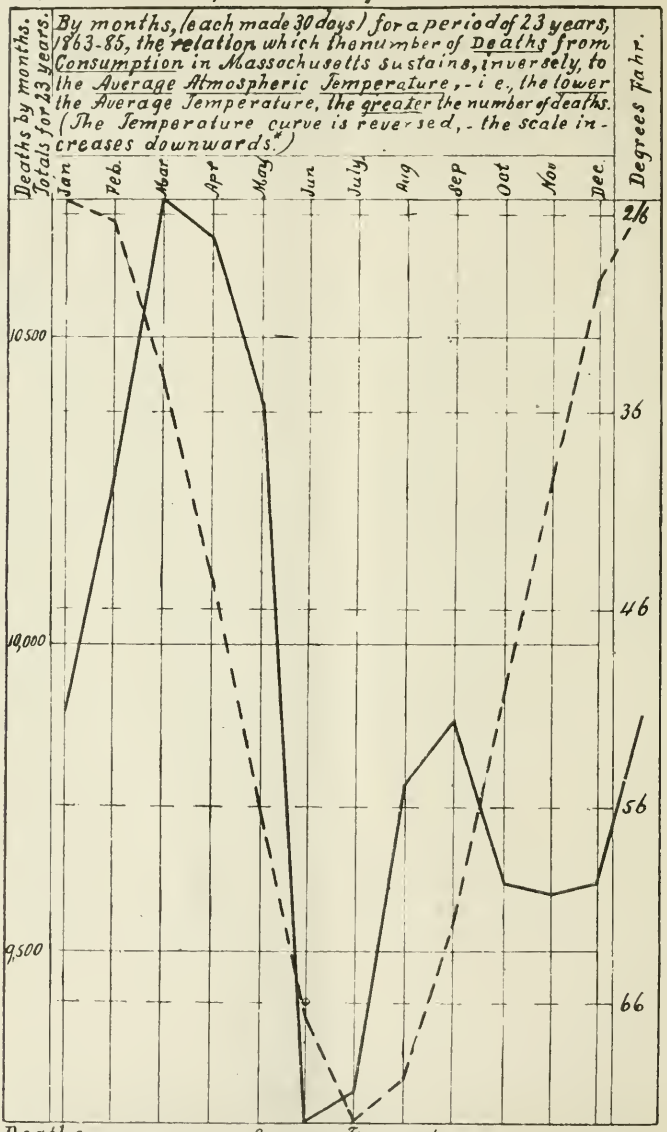
Diagram 2.--Croup and Absolute Humidity in Massachusetts.



Deaths _____. Average Absolute Humidity — — —.

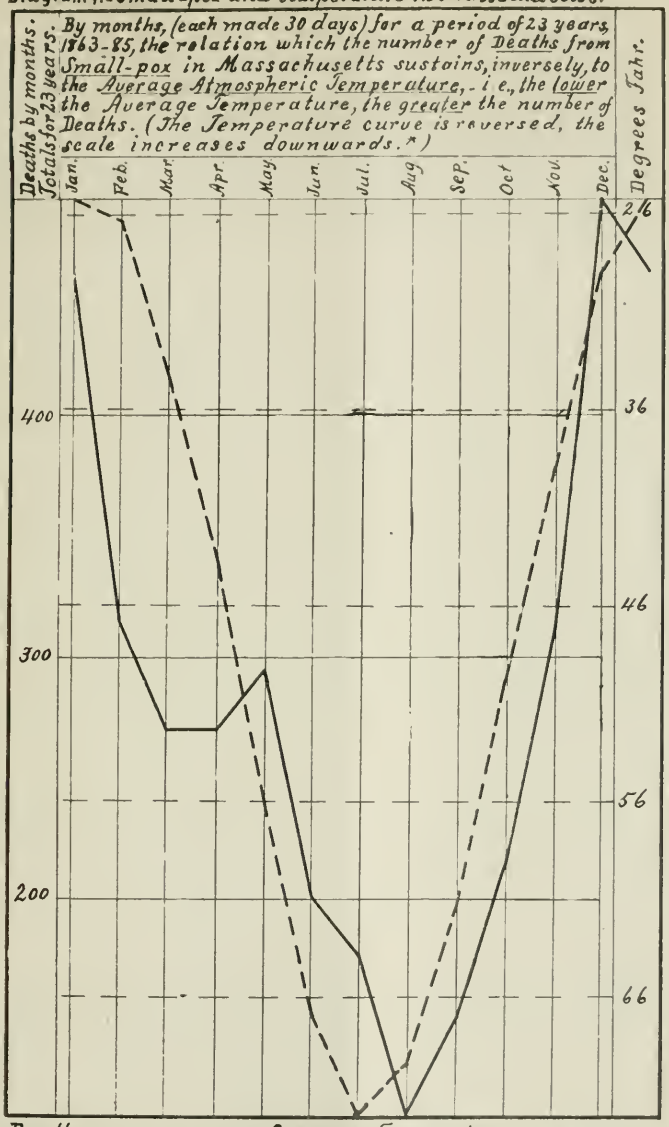
*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Absolute Humidity is compiled from the Relative Humidity and Temperature in the Report of the Chief U.S. Signal Officer for 1886. The curve represents the normal, at Boston, for 17 years, 1870-86.

Diagram 3.—Consumption and Temperature in Massachusetts.



*The numbers of deaths are compiled from the 44th Registration Report of Mass, 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature" It is for a period of 48 years between 1790-1870 at Cambridge Mass.

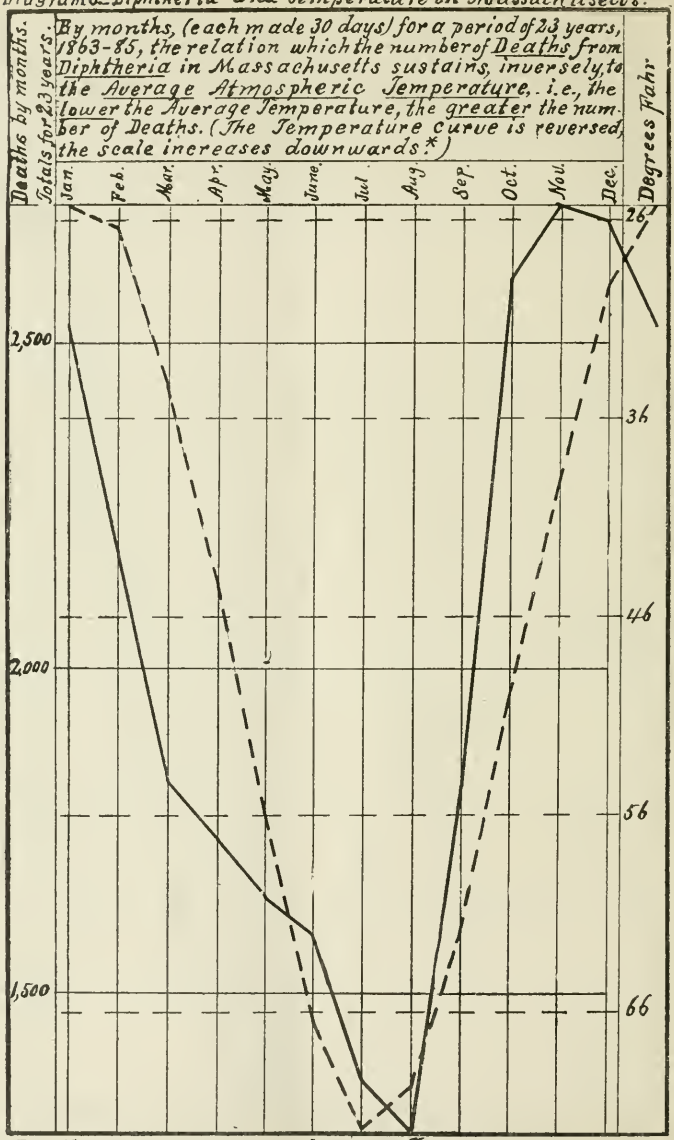
Diagram 4.—Small-pox and Temperature in Massachusetts.



Deaths ———— . Average Temperature — — — .

*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years between 1790-1870, at Cambridge, Mass.

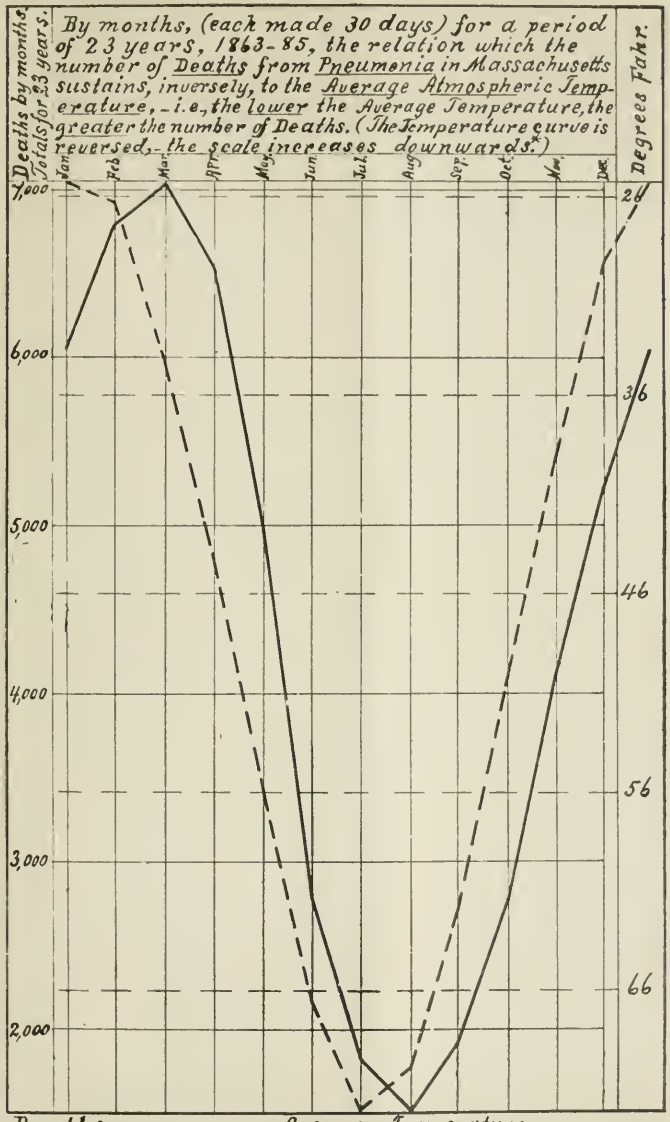
Diagram 5. Diphtheria and Temperature in Massachusetts.



Deaths ———— Average Temperature — — —.

*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature". It is for a period of 48 years, between 1790-1870 at Cambridge, Mass.

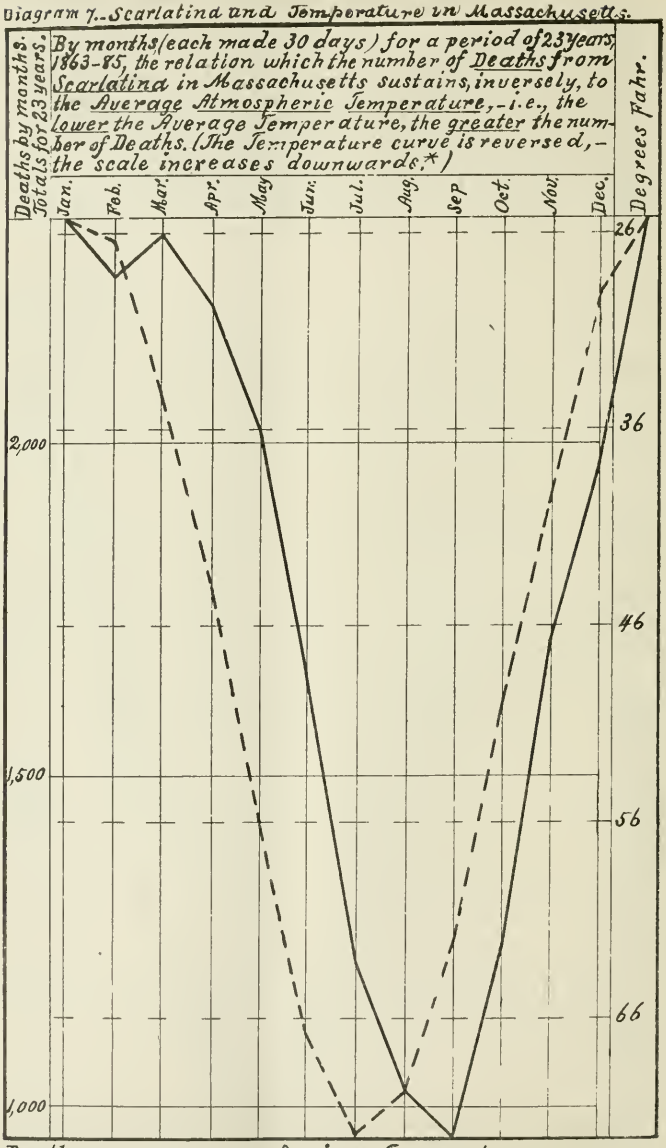
Diagram 6.—Pneumonia and Temperature in Massachusetts.



Deaths ———. Average Temperature — — —.

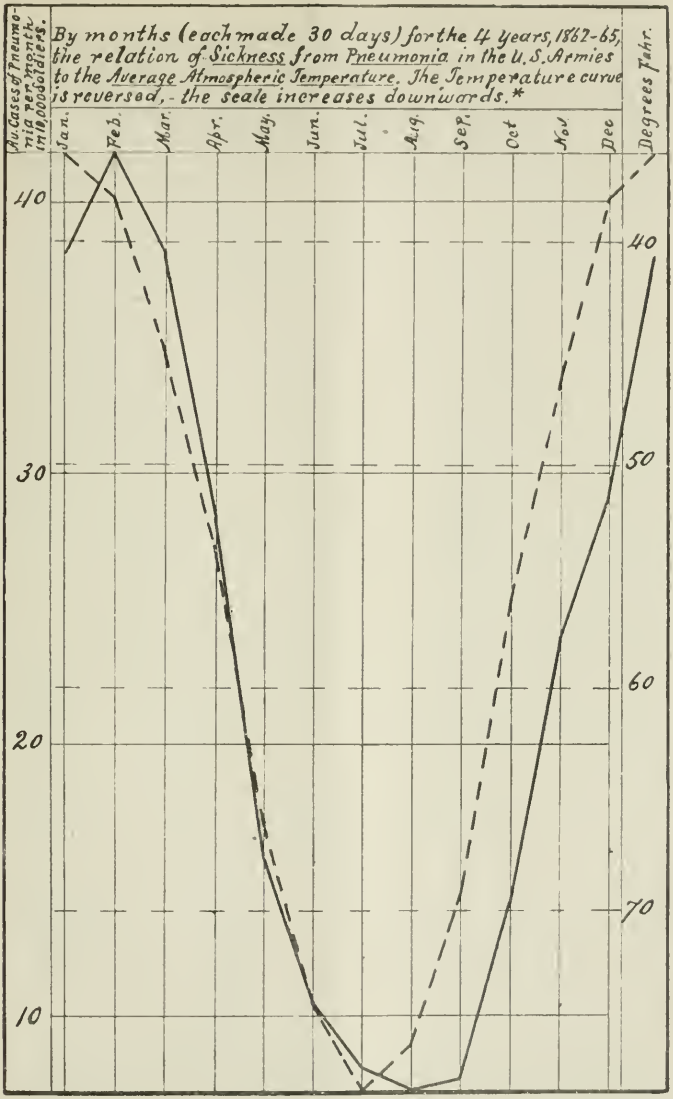
*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years between 1790-1870, at Cambridge, Mass.

Diagram 7.—Scarlatina and Temperature in Massachusetts.



*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years between 1790-1870, at Cambridge, Mass.

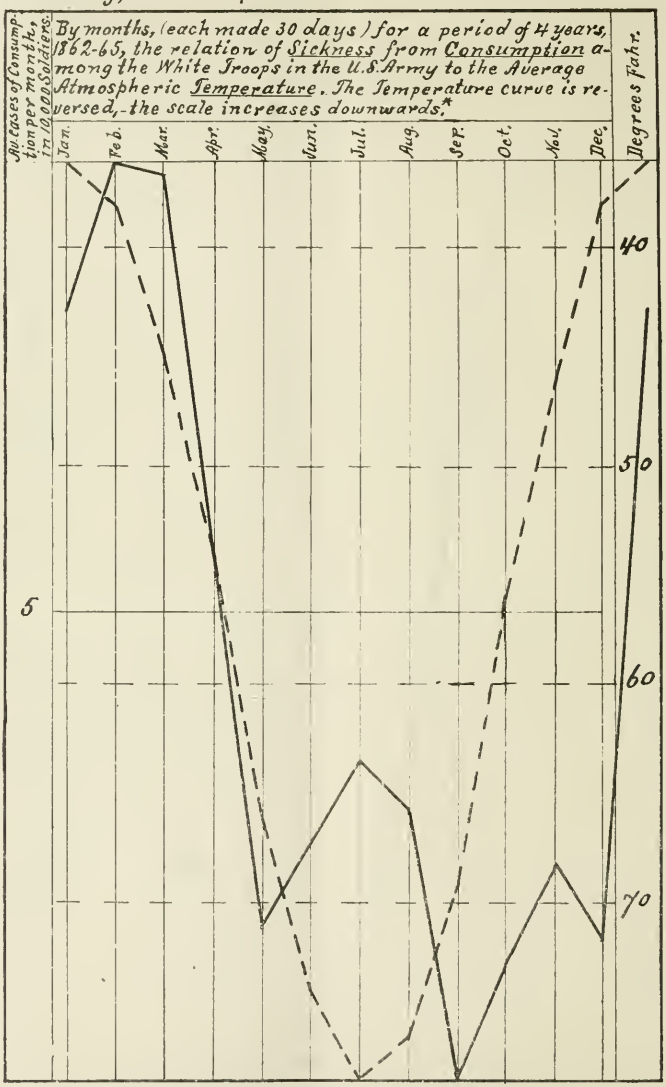
Diagram 8.—Temperature and Sickness from Pneumonia in U.S. Armies.



Pneumonia ———. Average Temperature — — —

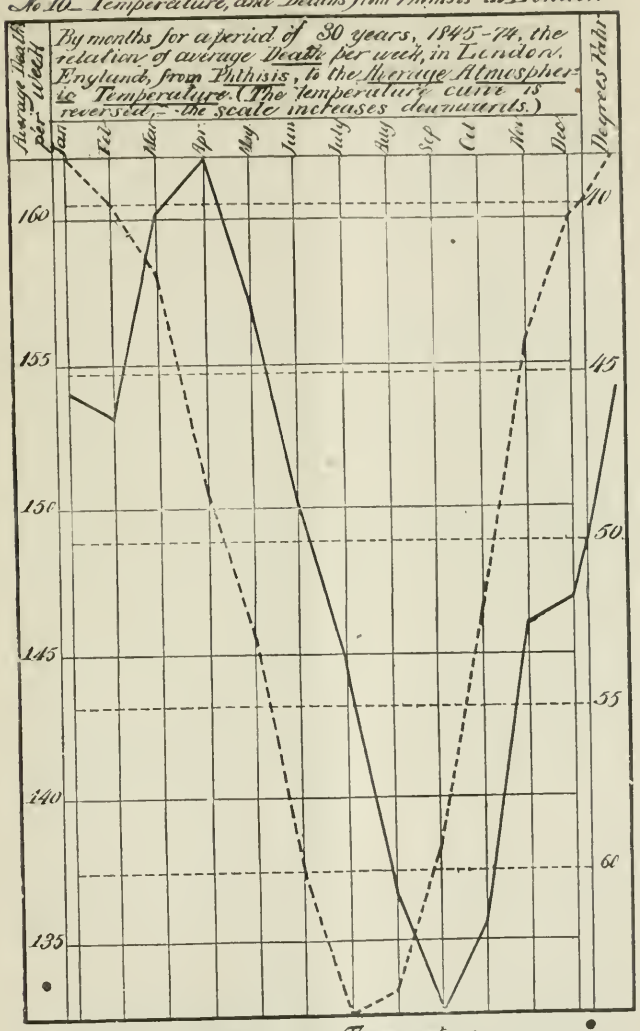
*The temperature curve is made from the normals at six stations representing approximately the localities occupied by the armies of the United States, during the war of the rebellion.

Diagram 9.—Sickness from Consumption in White Troops, U.S. Army, and Temperature

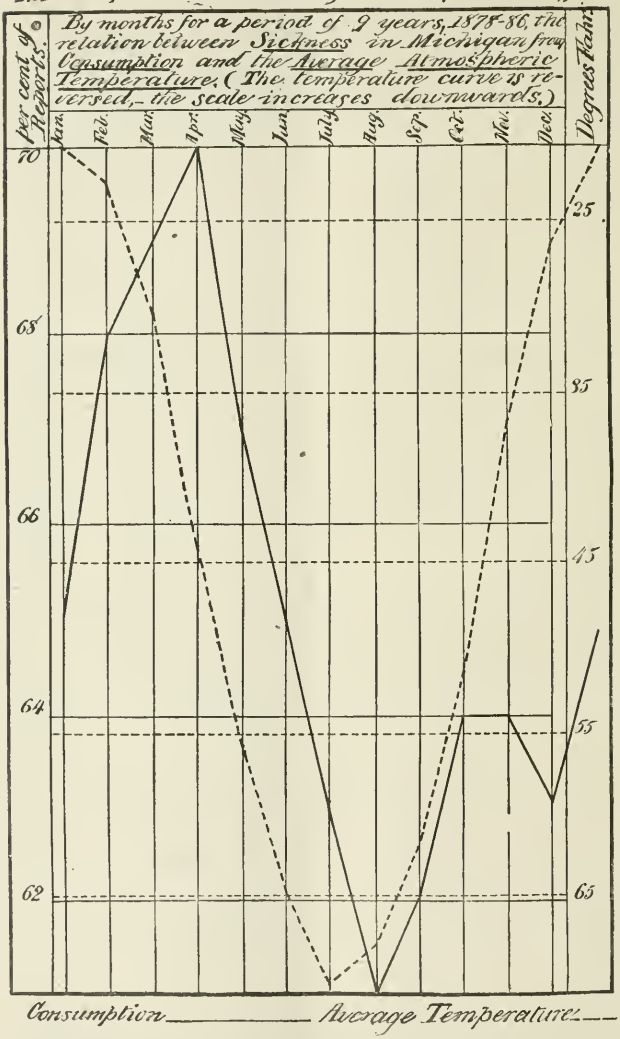


Sickness ———. Average Temperature — — —

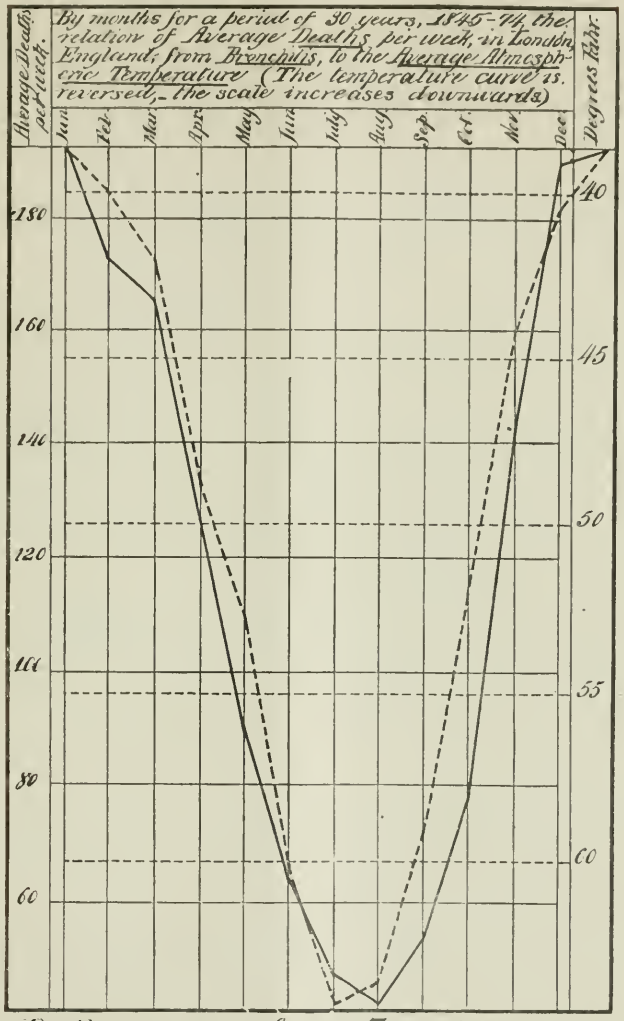
* The temperature curve is made from the normals at six station representing approximately the localities occupied by the Armies of the United States.


No 10 Temperature, and Deaths from Phthisis in London.
By months for a period of 30 years, 1845-74, the relation of average Death per week, in London, England, from Phthisis, to the Average Atmospheric Temperature. (The temperature curve is reversed, - the scale increases downwards.)
Average Death per week
Degrees Fahr
Jan
Feb
Mar
Apr
May
June
July
Aug
Sep
Oct
Nov
Dec
160
155
150
145
140
135
40
45
50
55
60
Deaths _____. Average Temperature - - - - - -
About 291 000 deaths from Phthisis are represented in this diagram data for which are from Jour of Scottish Met. Soc, New Series Nos XIII, XIV, XV, XVI, pages 252 and 263.

No. 11 Temperature and Sickness from Consumption in Michigan.



No 12.—Temperature and Deaths from Bronchitis in London.



About 176,000 deaths from Bronchitis are represented in this diagram data for which are from four of Scottish Med. Soc. New Series Nos. XLIII, XLIV, XLV, XLVI. pages 253 to 264

MEDICAL PROGRESS.

RAPID CURE OF BUBOES BY THE INJECTION OF IODOFORM VASELINE.—PROF. POUTAN claims to obtain excellent results in the treatment of buboes by the injection of vaseline impregnated with iodoform, which makes a kind of permanent iodoform dressing in the interior of the ganglion. His operation is as follows:

1. Antiseptic cleansing of the parts with Van Swieten's solution.

2. Puncture with a lancet if the skin is thin; with a bistoury if the pus is deep seated.

3. Evacuation of the pus, with complete expression of the liquid contents.

4. Injection of liquefied vaseline containing iodoform.

5. Dressings of bichloride cotton.

The puncture need not be made in a dependent position, as there is no subsequent flow. It should be central, so that the pus may be forced into it from all sides.

The evacuation of the pus should be complete and gradually made, although it is sometimes quite painful. The pain may be relieved by the injection of a few centigrams of cocaine around the bubo. After the expression of the pus a few syringefuls of Van Swieten's solution should be injected, to wash the walls of the pocket. The iodoform vaseline is then gently injected from a glass syringe previously charged and kept warm in water. The cavity of the bubo should be filled, but not distended. Immediately after the injection, and before the fluid has an opportunity to return, a cold dressing of cotton moistened in Van Swieten's solution is applied and kept in place by a spica bandage. This process renders occlusion nearly complete, because the cold application causes the vaseline to congeal in the lips of the wound, where it forms a plug. The dressing also aids in the occlusion.

After the first day all pain disappears and improvement takes place so rapidly that cure without cicatrization takes place, upon an average, in six or seven days. In some cases it is necessary to renew the vaseline. In three months forty-one buboes were treated by this method. In more than half of this number there was a cure, on an average, in less than five days; the longest time required was twenty-three days.—*Le Scalpel.*

ANTIPYRIN IN OBSTETRICS AND GYNECOLOGY.—Antipyrin, in MISRACHI'S experience, is a valuable means of combating the colic of menstruation, but it is necessary to pay attention to its indications. It is inefficacious when painful menstruation is dependent upon grave affections of the uterine appendages, and it may be contraindicated when dysmenorrhœa is complicated with scanty menstruation. Not more than 2 grm. should be given and this in two doses; in dyspeptic patients it should be given by enema.

Latterly the attempt has been made to alleviate the pains of parturition by the administration of antipyrin, and authors have reached very contradictory conclusions regarding its applicability. In twenty-one cases where the reporter has thus employed antipyrin in large doses by the mouth, by the rectum or by hypodermic injection, he has obtained notable relief in only six instances. Antipyrin, then, is not an obstetrical anæsthetic. Its useful action is only obtained in certain painful complications of labor such as uterine contractions accompanied by exaggerated pain, as is observed in posterior positions of the vertex, premature rupture of the membranes, spasmodic contraction of the cervix, etc.

If the action of antipyrin is inconsiderable in the pains of labor, it has, on the other hand, a very marked effect upon the after pains. Whatever may be the cause of these pains, antipyrin has succeeded in more than eighty cases in one hundred, and its action is absolutely constant when the pains are provoked and kept up by the administration of ergot. The reporter makes only one exception to this rule, and that is in cases where there is a retention of a portion of the secundines or a clot. In such cases the first thing to do is to empty the uterus and give hot irrigation, after which the antipyrin may be given with excellent results in relieving after pains.—*Jour. de Méd. de Paris.*

HOW TO INCREASE THE SOLUBILITY OF QUININE.—FRIULZI has observed that the salts of quinia are much more soluble in the presence of antipyrin; thus, 1 gram of the hydrochlorate of quinia with 0.4 to 0.5 gram of antipyrin dissolves in 2 grams of water at a temperature of 20° to 25° R.; with 0.20 to 0.25 gram of antipyrin a solution is obtained in 2 grams of water at a temperature of 35° to 40° R.; without the antipyrin, on the contrary, a temperature of 42° to 45° R. is necessary, while, upon cooling, a large portion of the quinia is deposited in crystalline form. Since solutions prepared with antipyrin are stable, they may be advantageously employed for subcutaneous injection.—*St. Petersburger Med. Woch.*

TUBERCULOSIS CONVEYED BY EARRINGS.—A case is reported from Unna's policlinic for skin diseases, in which a girl 14 years of age, of a healthy family, became infected with tuberculosis by wearing earrings which had previously been worn by a woman who died of pulmonary consumption. Flat ulcers with undermined borders appeared in the lobes of the ears, especially the left ear. There was also swelling of the left cervical glands and dulness over the apex of the left lung. Tubercles were found in the granulations of the ulcers and in the sputum. Acute phthisis supervened.—*Wiener Med. Bl.*

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JANUARY 25, 1890.

HOW SHALL PHYSICIANS BE EDUCATED?

It is but a few weeks since a society held its meeting in Chicago, having for one of its principal objects the advancement of the standard of preliminary education in the medical profession. The President, in his opening address, lamented the small number of liberally educated men among the students and graduates of our medical schools, and urged the importance of a collegiate education on those who would adequately prepare themselves for the responsibilities of our calling. On the other hand, in a series of articles on the choice of a profession, lately published in *Harper's Young People*, Professor Austin Flint took the ground that it was not advisable for most of those intending to practice medicine to take a college course, although he considered a certain amount of classical study very desirable. He recommended, in substance, that the intending physician should master the studies required for admission to our better colleges, and then, at about eighteen years of age, enter on his professional studies. The opinion of a man of such eminence as an investigator and such experience as an educator is worthy of respectful consideration, and it may be well to consider whether the advantages to the physician of a classical education are such as to justify the outlay of time and money which it involves, and, if so, to what extent it should be carried.

It cannot be denied that a great part of the knowledge laboriously acquired during a college course is soon forgotten, and that most of it has little direct application to medical practice. Nevertheless, the fact remains that no adequate substitute for classical study as a means of mental discipline has yet been discovered. The records of the German universities show that, even as scientific students, those who come from the gymnasium, where Latin and Greek occupy a prominent place in the curriculum, take a higher standing than graduates of the realschulen, in which attention is principally paid to the natural sciences and modern languages. The importance of a thorough training in methods of study is especially great to men who are to acquire their professional training under the lack of order and system which, unfortunately, characterizes the instruction in most, even of our more prominent, medical colleges. But this is not the only advantage, perhaps, to most men, not even the greatest benefit of a collegiate course. The study of the masterpieces of the greatest minds, and the daily association with men of intellectual tastes, have a tendency, which few who are exposed to these influences wholly escape, to broaden the student's view of life and to make him not only a successful business man, but a good citizen. It would be foolish to claim that a thorough education in the true meaning of the word—bringing out what is in a man, rather than pouring knowledge into him—cannot be otherwise obtained; but it is true of the medical profession, as of other callings, that the proportion of liberally educated men is highest in the foremost ranks of the profession.

But, notwithstanding all this, it is true that art is long and constantly growing larger, and life is short. The requirements for admission to our best colleges have risen greatly within the last thirty years, and the expenses of tuition and of living have grown proportionately. A man can hardly be fitted to enter a first-class college under 18 years of age, and when he graduates, at 22, he is likely, unless backed by a pretty long purse, to be encumbered with debts which will furnish occupation for his time and energies for two or three years. If, then, he takes a three years' course of professional study, and a year in a hospital, he will be 28 years old when he opens his office. In the meantime his schoolmate, who began his medical studies when he entered college, will very likely be comfortably settled in practice, with a family growing up around him. The age

at which it is desirable to begin the practice of medicine is perhaps open to discussion. Even granting the practicability of acquiring a thorough professional equipment at the minimum age prescribed by our medical schools, there are probably few who have at that age the maturity of judgment needed in a profession in which wisdom is quite as important as knowledge. On the other hand, too late an entrance on practice may imply not only loss of valuable time, but of readiness of adaptation to the change from the classroom and laboratory to the bedside. It may perhaps be laid down as a general rule, admitting of numerous exceptions, that 24 or 25 years is the most favorable age for entering on independent practice, although hospital and dispensary work, under competent direction, may be profitably undertaken somewhat earlier. The question, then, seems to be, not how much it is desirable for the physician to know before he begins practice, but how he can obtain the most useful training and instruction within reasonable limits as to time and expense.

It would not seem difficult to so modify the college curriculum as to enable the student to acquire knowledge that would be directly useful in his profession, without material sacrifice of the general culture which it is the object of a liberal education to impart. The natural sciences have a value of their own as a mental discipline, which is practically admitted by their introduction, to a greater or less extent, into the course of study of all our literary colleges. In most of them there is more or less choice allowed the student during the last two years of his course, and some, at least, provide a certain amount of instruction in anatomy and physiology. There is no reason why these studies, properly pursued, may not be of as much value as a means of discipline and culture as physics and astronomy, and need be no difficulty where, as is often the case, a medical school is associated with the college, in making such a substitution. The student, then, having devoted the first two years of his college course to languages and mathematics, might take up, in the last two years, anatomy, human and comparative, chemistry, physiology, histology, and even, perhaps, a certain amount of general pathology, including bacteriology, and still be able to study logic, rhetoric, psychology and philosophy with the remainder of his class. Graduating from college at 22 or 23, with this amount of instruction in the fundamental of medical science, he could easily graduate in medicine in two years more and be prepared to compete, on more than equal terms, with those who had taken the short cut.

The matter of strictly professional education does not need, at present, discussion so much as agitation. That students should listen to lectures on practice of medicine, surgery, obstetrics and therapeutics, while ignorant of the rudiments of anatomy, physiology and chemistry, and that after two brief terms of what can only be considered a parody on instruction, they should be intrusted with the most sacred interests of their fellow men, is an absurdity, to use no stronger term, which needs only to be stated to be condemned, and which would not be tolerated if students and instructors were not willing to subordinate the dignity of their profession and the welfare of their patients to pecuniary profit. The result is that the profession is crowded with half-educated men, while the well-informed and competent suffer in purse from their competition, and in reputation from their ignorance.

Although we have endeavored above to outline the sort of preliminary education that seems to us most desirable for the student of medicine, it would not, probably, be desirable, even if there were any chance of its being brought about, that our medical schools should at once raise their requirements to such a standard. It is not, however, too much to ask that they should require the ability to use the English language with reasonable correctness, and a fair degree of general intelligence, with some sort of mental training, in applicants for admission. Unfortunately it is notorious that this standard is far in advance of the practical requirements of many prosperous schools. A systematic, graded course of instruction extending through at least three years, with practical work in the laboratory and at the bedside, is little enough, in the present state of medical science, to prepare the student for the demands that will be made on his knowledge and skill when the issues of life and death are in his hands. The examinations should be such as to thoroughly test the knowledge and capacity of the applicant for a degree, and should be conducted by persons to whom the quality, not the size of the graduating class, is the important mat-

ter. When such a course as this is adopted, we shall see a notable advance both in the usefulness and the repute of our profession. So long as a medical degree is no guaranty either of general intelligence or professional skill, the whole profession must suffer, not unjustly, for the fault of its unworthy members, and honorable and able men will be classed, in the public estimation, with ignorant pretenders within and without its ranks.

UNIFORM STATE LEGISLATION.

The founding of a nation was not only beset with many perils, but the provision for its varied wants required such labor as only a heroic people could accomplish.

In the development of a commonwealth of such magnitude in such a brief period of time, those needs which only the medical profession could supply have been so great, and the demands to be met so immediate, that we may justly congratulate ourselves upon the success already achieved. Only those familiar with the obstacles to be overcome can appreciate the progress already made.

It is obvious that the time is fully at hand when legislation is needed to remedy that which seems to be otherwise without control, and to perfect the work so well begun. If we are to secure a uniform and reasonable standard of requirements for graduation in medicine, the power to confer degrees must be divorced from those organizations which impart instruction. The legislation which can alone accomplish this is vested in the several States. More than any other organizations, the various State Medical Societies can favorably influence such legislation.

The need of a standard of requirement which shall be uniform in all the States can hardly be over-estimated. The necessity, then, of wise and concerted action on the part of all State Societies becomes obvious, and we hardly conceive of any other means of initiating this great work, so feasible or so promising of good results, as that of securing a national conference of the officers of the State Societies for the discussion of the questions which are involved. May we venture to suggest the expediency of such a conference in connection with the next annual meeting of the American Medical Association at Nashville.

The Journal will be happy to serve as the medium of communication, if this subject shall favorably commend itself to the officers of the various State Medical Societies. In our next number we purpose to present the present status of medical legislation in the various States.

EDITORIAL NOTES.

HOME.

The New York Pathological Society.—The following officers were elected at the annual meeting of this Society held January 8, 1890: President—Dr. J. West Roosevelt; Vice-President—Dr. H. P. Loomis; Treasurer—Dr. J. H. Hinton; Secretary—Dr. T. L. Stedman; Editor of the Transactions—Dr. G. C. Freeborn; Committee on Admission and Ethics—Drs. W. P. Northrup, H. P. Loomis, R. H. Sayre, J. S. Ely, and R. G. Freeman; Committee on Publication—Drs. T. M. Prudden and W. B. James.

Deaths Following the Use of a Soothing Syrup.—Dr. A. G. Belleau has called the attention of the Quebec Board of Health to six fatal cases among children following the use of a so-called soothing syrup, which upon examination showed the presence of opium in large proportion. It is supposed that a mistake was made in the compounding of the syrup and four or five times the amount of opium required by the formula was introduced by the mixer. In the case of five of the children the medicine produced convulsions in which they died; so that their deaths were certified as due to that disorder. But when the sixth child fell ill and had a coma, and not convulsion, this irregularity led to the discovery that this intensely soothing syrup had been used, and an inquest by the coroner was ordered. The ordinary soothing syrups of the shops contain more or less opium or morphia and are essentially so dangerous that their sale should be forbidden by law, except under the same conditions as the other preparations of known strength which must be sold and labeled as poisons, if indeed their sale cannot be interdicted altogether.

Sixty Years in Practice.—Dr. Isaac Coffman, of Phoenixville, Pa., is said to be the oldest living graduate of the University of Pennsylvania. He was graduated in 1827 and has been in almost uninterrupted practice ever since, over sixty years. He does not look like a man who is more

than 60 years old. His eighty-fifth birthday occurred on New Year's day.

ONTARIO MEDICAL ASSOCIATION.—Dr. William Goodell, of Philadelphia, has been invited to deliver an address before the Ontario Medical Association, at the next annual meeting in June. Toronto has been selected as the place of meeting, and the members of the profession in that city are already organized and at work to make the coming convention both useful and attractive.

TYPHUS FEVER IMPORTED.—The importation of typhus fever from Germany is sufficiently rare to be noteworthy. The New York Board of Health have had seven cases of this disease under observation at the North Brother's Island Hospital, of whom all except one are known to have come over on the steamer Westernland. There are doubtless other cases scattered throughout the country, immigrants on that same vessel over which some physicians having seldom to cope with ship-fever have been puzzling to find out why such grave febrile symptoms should attend the prevailing epidemic, and perhaps have seen a strange contagious quality about it. Keep a lookout for all Westernland immigrants.

THE CREMATORY AT TROY, N. Y.—The twelfth crematory in this country has just been finished at Oakwood Cemetery, Troy, N. Y. Two bodies have already been incinerated there. This is the most elaborate structure of its kind in the world, comprising, as it does, a memorial chapel with a lofty tower. It is known as the Earl Memorial Building, given to the cemetery in memory of Mr. Gardner Earl by members of his family. The chapel may be freely used by all who have the privileges of the cemetery. There are now forty crematories in Europe and America. Of these Italy has more than half, while France, Germany, Denmark and Sweden are content with one for each country.

FOREIGN.

CULPABLE EXPERIMENTATION WITH HYPNOTISM.—In one of the law courts of Helsingborg, Sweden, a clear case of hypnotism has puzzled the judges. A young medical student brought suit against a practicing physician in the town for having hypnotized him several times against his will, with the result that his nervous system was injured and his mind was somewhat enfeebled. Several witnesses appeared for the plaintiff, and, to the astonishment of the court, they all appeared to be crazy, and gave the most contradictory and astounding testimony. Hereupon a medical gentleman came upon the stand and further astonished the court by the announcement that his confrère, the defendant, had hypnotized the witnesses and made them say just whatever he liked. Finally the court adjourned the case and appointed a commission to see if the entire crowd were not crazy.

THE death of Prof. von Troeltsch, of Wurtzburg, has been announced by cable as having taken place Saturday, January 11. He was a veteran otologist and a well known writer on diseases of the ear.

FOREIGN UNIVERSITY INTELLIGENCE.—

Berlin.—Dr. Bramann has been promoted to the rank of Extraordinary Professor of Surgery.

Bologna.—Dr. Pellacani, Extraordinary Professor of Pharmacology in Genoa, has been appointed, after open competition Professor of Forensic Medicine.

Cadiz.—Señor Löhr has been selected, after competition, for the chair of Hygiene, and Señor Guedea y Calvo for that of Clinical Surgery.

Palermo.—Dr. Marcacci has been appointed Professor Extraordinary of Physiology.

Prague (Bohemian University).—Dr. C. Schwing has been promoted to the rank of Extraordinary Professor of Midwifery and Gynecology.

St. Petersburg.—Dr. Hoyer, Professor of Embryology and Histology, has been reappointed for a further term of five years, although he has completed thirty years of service. Ninety-five students have passed their final examination this term; of these, thirty-five obtained the note "very good" in more than one-half of the subjects, thus gaining the right to remain at the Academy for further study.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Grigoroff, Ordinator of one of the Moscow hospitals, and author of works on syphilis; Dr. R. Hüber, of the Maria Magdalen Hospital, St. Petersburg; Dr. Ernst von Kade, who acted as assistant to Pirogoff during the Crimean War.

PROFESSOR LEYDEN has been summoned from Berlin to a consultation with the Czar's physicians.

TOPICS OF THE WEEK.

PROGRESS OF THERAPEUTICS

From a general review of the progress of medicine and surgery during the year 1889, as given in *The Lancet*, we make the following extracts with reference to therapeutics:

"Notwithstanding the numerous public gatherings of the year at which pharmaceutical and therapeutical progress is currently reported, some of the best work is to be found in scattered papers which have been published independently of congresses and associations. It might, indeed, be said that knowledge cannot afford to wait for public meetings, any more than it can be specially manufactured for them. An observer who feels he has something to say, hastens into print in the hope of submitting his views to the experience and criticism of a wider public. On the other hand, the work brought before public gatherings is not infrequently of a somewhat sketchy description, and hence challenges, and sometimes finds, contradiction with increasing experience. Of all the meetings of the year, perhaps that held in Paris was the most disappointing in the material set forth. Still, the year has introduced many new remedies and many valuable contributions to the progress of therapeutics. Some of the new remedies, after being mentioned once or twice, seem to have speedily fallen into obscurity. The ardent accounts of early observers sink into silence which is eloquent. Pyrodine and exalgine are thus in the clouds; the former shrouded in many rumors of danger, the latter in great uncertainty as to its chemical composition. Strophanthus, however, has been attacked with great vigor, and however little its therapeutic position is improved, there is no doubt that Dr. Fraser's researches upon its composition will hold a deservedly high place. This drug has frequently caused disappointment, and a possible explanation appeared to lie in the different varieties with which the market was flooded as soon as it semed to bear any particular commercial value. Very early in the year the French Academy of Medicine agreed that preparations of strophanthus differed in their action from strophanthin, but could not decide which gave the best results. After a brief note upon the natural history of strophanthus read before the Royal Society of Edinburgh, Professor Fraser reserved his energies for the very elaborate paper upon the Chemistry of Strophanthus Hispidus, which was read at the British Pharmaceutical Conference at Newcastle. The reactions of strophanthin and strophanthidin were exhaustively dealt with, and the results of many important analyses and experiments were set forth with great lucidity. Still, in spite of this paper, strophanthus does not appear to be growing in favor with the profession. In its praise it is urged that it possesses no cumulative action, and that its effects are promptly produced; but, on the other hand, there seems no doubt that it may occasionally disturb the alimentary canal, and that, on account of the local irritation it produces, it is not convenient for hypodermic use. Much has been said upon the relative value of opium, morphine and codeine in diabetes; the opinion appears to be gaining ground that codeine has less controlling power than either opium or morphine, and that its therapeutic value is merely that of a weak or diluted morphine. Several highly interesting papers upon opium have touched upon methods of preparation and the use and abuse of opium as a luxury in China. Hypnotics continue to attract attention, and to form the subjects of more or less patient investigation. They illustrate the rule that the newest remedy acts best, and has the least to be said in its disfavor. Paraldehyde still claims many adherents, who refer apologetically to its taste and persistent odor. Urethane is less frequently mentioned; while acetone, hypnone and methylal were almost forgotten until they were brought up as hypnotics possessing inferior properties by Dr. Leech. Another hypnotic which seems, perhaps, to have passed the zenith of its glory is sulphonal; this was first lauded as the ideal hypnotic, which could always be relied upon to produce refreshing sleep without danger, but further experience shows that the sleep is sometimes preceded by excitement, that it is not always refreshing, and that after the employment of the drug there may be a persistent tendency to drowsiness, and occasionally an ataxic disturbance of gait. When, with these disadvantages, the insolubility and the high price are considered, there seems yet room for new hypnotics. These have been forthcoming in chloraiamide and somnal; the former is just now passing through the phase when all benefits are observed and recorded, while ill effects (if any) are as yet undiscovered. The latter, which is also described as 'ethylirtes chloral-urethane,' although a very recent introduction, has already been assailed as being chloral-urethane under a new name. Perhaps the lessou of the comparative dissatisfaction given by hypnotics is that *insomnia* is not to be treated merely or chiefly by these remedies, but by attention to the causes and peculiarities of individual cases. The comparative uses of the recent antipyretics have been further investigated, and the positions of antifebrin, antipyrin, phenacetin and others have been more accurately determined; of these, as antipyretics, the general consensus seems in favor of antifebrin and phenacetin, the latter especially having found many advocates. Antipyrin, however, continues to be a fashionable drug and to be used in various forms of neuralgia and also in chorea, but there have been frequent warnings against its employment in conditions associated with cardiac weakness, and it would seem that, besides producing a rash, it may also occasionally give rise to hæmaturia and other grave symptoms. Apart from the above mentioned subjects, the year seems to have been characterized by a greater catholicity of interests than usual. The position of salts of lithia as solvents of uric acid, when compared with corresponding compounds of sodium and potassium, has been restated as being strictly proportional to the molecular weights of the solvents. Salol, of which much had been said concerning the treatment of cholera and of neurelgia, has more recently been recommended for the relief of the pain of renal calculus. The use of antacids in dyspepsia and gravel formed the subject of an interesting paper read at the meeting of the British Medical Association by Sir William Roberts, in which the pre-

ventive treatment of uric acid gravel was touched upon all too briefly. Lactose has been suggested as a diuretic, but the dose recommended presents some difficulties. A more striking innovation is the treatment of chronic uræmia by morphine, which is so contrary to the general principles upon which chronic uræmia has hitherto been treated that it calls for very careful investigation. For the form of diabetes or glycosuria, which is so frequent in elderly stout people, antipyrin has been advocated on account of its power of diminishing the excretion of urinary solids and water, while also allaying the excitability of the nervous system. Important papers have appeared in our pages emphasizing the value of sulphur, recommending the use of the ice-bag in pneumonia, and introducing Sir Joseph Lister's new antiseptic. The pharmacology of the group of nitrites has been further studied, and nitro-glycerine has been suggested as a substitute for alcohol. The troublesome itching so often associated with chronic forms of jaundice is said to be relieved by pilocarpine. The behavior of antipyrin, when prescribed with other drugs, the relationship and sources of the different alkaloids of the belladonna group, the chemical composition of the coca bases, and of cascara sagrada, the actions of nlexin, and the explanation of the actions of abrus præcatorius, have formed the subjects of much valuable and painstaking research during the year. It is needless to refer at length to the progress of pharmacy, but abundant indications show both the readiness of pharmacists to meet the requirements of the medical profession, and also the high estimation already formed of many of the newer preparations.

RICHARD VON VOLKMANN.

Before beginning his lecture in the Surgical Hospital in Berlin on the day after Volkmann's death, PROFESSOR VON BERGMANN addressed his hearers as follows: "About twenty five years have elapsed since Volkmann began his academic career. He was one of the first surgeons who 'domesticated' Lister's antiseptic method in Germany, and the brilliant successes which he gained by it went far to confirm it and to gain its acceptance. Another part of his work was the study of cancerous tumors, and it occupied him till the last days of his life. His great excellence as a clinical teacher and as a military surgeon during the last campaigns is sufficiently known. But it is not only in his capacity as a scientist and operator, but also as a man, that we owe him our admiration, for he was in every respect so true a character, so sincere a man, ever mindful of his great and serious duties. He was a poet too, and a fresh breeze blows through his 'Songs from the Vale of the Sarle;' but especially his widely known and popular 'Reveries at French Firesides' are a proof of his poetic endowment, and a memorial of that time of the great war of 1870–71 which was so glorious for Germany. In him a man has departed who succeeded in gaining a name such as few possess, and who in full measure deserves that his memory be warmly cherished by men of science and by the nation." Dr. von Coler, Physician-General to the Prussian Army, has published the following tribute to Volkmann's memory: "Professor Richard von Volkmann, Surgeon-General *à la suite* of the ambulance corps, head of the surgical hospital of the University of Halle, Privy Councillor in Medical Affairs, and knight of high orders, died on the 28th inst., at Jena. The officers of the ambulance corps deeply and sorrowfully mourn the departure of one of its most eminent members, a master of German surgery and of the treatment of the sick and wounded in war. As in the campaigns of 1866 and of 1870–71, inspired by high patriotism and genuinely philanthropic feeling, friendly to all good and noble things, he devoted his great knowledge and skill to the service of the army, and was a helper and life-saver to thousands. He remained also after the wars as the honored deliverer of advanced courses of lectures for military surgeons, and as an active adviser, and an indefatigable promoter of the interests of the medical and surgical department of the army. The gratitude we owe the deceased lives on with his memory, which will for long be kept fresh by the rich fruits of his blessed work." On his death-bed Volkmann contributed 150 marks to the fund for the erection of a monument of the Emperor Frederick on the battle-field of Wörth. In the letter which accompanied the gift he wrote with a trembling hand: "I think, too, that the only suitable place for the chief national monument of the Emperor Frederick is Wörth." He added that, if his health permitted, he would do all that in him lay for the realization of the scheme. The streets through which his funeral passed in Halle were crowded with spectators.—*The Lancet.*

THE INFLUENZA EPIDEMIC.

The number of cases of influenza rapidly increased last week. Most of the lectures and courses at the hospital had to be suspended on account of the illness of the respective lecturers. The hospital wards, which are filled with patients every year at this season, are now so overcrowded that many patients have to lie on the floor, and numbers of people applying for admission have to be refused. Besides the civil, the military portion of the population is also suffering greatly from the disease, and in some regiments here 30 per cent. had to be sent to the military hospitals from that cause. There are, in addition, many thousands of the population under private treatment; but, as there is no compulsory notification, the number cannot be stated, even approximately. The weather has been somewhat foggy during the last few days, with a rising temperature. The cases which came under observation were altogether of a mild character, the fever lasting only from twenty-four to thirty-six hours, and the patients recovering after two days. Complications were rare, only two cases of catarrhal pneumonia having been observed as a result of influenza up to the present at the General Hospital; but several cases of relapse in patients who had already recovered from the first attack have been reported to me.

Accounts of the outbreak of the disease in several provincial towns of Austria have also been received here. The majority of the physicians in Vienna consider the disease to be non-contagious, and in the course of a lecture delivered last week Professor Nothnagel called attention to the miasmatic character of the disease, which does not spread along the usual lines of traffic.—Vienna correspondence *The Lancet.*

PRACTICAL NOTES.

THE TREATMENT OF INFLUENZA.

M. H. Huchard, writing in the *Revue Gén. de Clin. et de Thérap.* (Dec. 12th), speaks of nervous prostration as being a chief clinical characteristic of severe cases of influenza, requiring for its treatment quinine, alcohol, and in bad cases, even injections of caffein and ether. Quinine, he says, is indicated on account of the markedly remittent type of fever, and to moderate the evening exacerbation it suffices to give a full dose (5 to 15 grains) of the sulphate or hydrobromate in the morning. Smaller doses more frequently taken are useful for their tonic rather than antipyretic effect. In the neuralgic or rheumatoid form of influenza antipyrin (15 grains) combined with bicarbonate of soda (7½ grains) is recommended by M. Huchard, to be taken every four hours, or instead of antipyrin, phenacetin or salol (7 grains). Influenza often assumes a broncho-pulmonary form, and in certain cases is very grave. In the epidemic of "la grippe" in 1886, recorded by M. Menetrier, the pneumonic forms were very asthenic. In such cases, tonics, milk, alcohol, and, in fact, general restorative measures are indicated rather than local applications to the chest. If the dyspnœa became severe, and the condition termed by Graves "pulmonary paralysis" ensues, then strychnia is of value; or in case of impending asphyxia or renal asthma, venesection; but when the asthenia itself threatens life, there should be no hesitation at resorting to hypodermic injections of ether, and especially of caffein. For the gastro-intestinal form, mild aperients, ipecacuanha, and the use of salicylates of bismuth or of magnesia, napthol, or iodoform to promote intestinal antisepsis, are indicated.—*The Lancet.*

THE MECHANICAL DIVISION OF CASEIN IN BOTTLE-FED INFANTS.

The problem of infant feeding, to the majority of physicians, presents some of the greatest difficulties found in practice.

Great as this is in a state of health or when an infant, fairly nourished, is, from any cause, suddenly deprived of the breast, it becomes still greater when digestive irritation or perhaps inflammation has set in.

During the last summer the writer had the usual number of annoying cases of indigestion, with and without intestinal inflammation, and was many times put to his wit's end for something in the way of easily digested food.

Reflection convinced me that if by some means I could mechanically separate the tough coagulum formed by the addition of the gastric juice of the child's stomach from the injested milk, a step in advance would be taken. Of course such division must be undertaken previous to feeding. After some experimenting, I conceived the following plan, which I have put into good use many times.

About two grains of good scale pepsin are dissolved in a dessertspoonful of lukewarm water, and then added to about four ounces of warm milk.

In the course of a few minutes coagulation of the caseine follows. The clotted milk is now put in a cheese cloth bag, and the bag lightly squeezed in the hand.

If the stomach is very irritable and the digestive power exceedingly bad, at first slight force is used. By this means we get, practically, whey, but with a stronger digestion more and more force is applied until almost all the caseine is forced through the meshes in rather fine particles. These are shaken up well in the fluid portions and given, small quantities at a time, by means of an ordinary nursing bottle. My experience has been that caseine thus broken up does not again become blended, but exists as a flocculent rather than a tough mass, resembling in this respect human milk.

Milk thus prepared is given subject to the same rules governing its use in ordinary cases.

It is not pretended that this is the best way of administering food to bottle-fed infants suffering from indigestion or entero-colititis, but only one way. When the reader, like the writer, has tried infant food after infant food, and sees the patient steadily growing worse, he will, I am sure, grasp at any rational, especially if it be simple, means of treatment.—Dr. Frank A. Morrison, *Weekly Med. Review.*

A FOOD FOR INFANTS.

In the summer diarrhœal troubles of infants, where milk in any form disagrees and vomiting is easily provoked, Jacobi says that a mixture which has rendered him valuable services is about as follows: Five ounces of barley-water, the white of one egg, from one to two teaspoonfuls of brandy or whisky, some salt and sugar; a teaspoonful every five, ten or fifteen minutes, according to circumstances. Mutton broth may be added to the above mixture, or may be given by itself, with the white of an egg and some salt. —*Archives of Pediatrics.*

ECZEMA RUBRUM.

Man, past middle life, who was suffering with one of the forms of eczema, called eczema rubrum. The back of his left hand, fingers and wrist were covered with crusts and scales; the skin was infiltrated and thick; ulceration had exposed the true skin, which looked red and

macerated. This is a sub-acute form of eczema. It began two years ago at the elbow with vesicles and pimples, which were close together. He had some fissures of the skin at that time. There is pain in the skin most of the time; appetite good and bowels regular. No cause could be found for it. Eczema is not purely local, but is a constitutional disease, dependent on some constitutional derangement. Externally he was ordered:

℞ Cocainæ hydrochloratis gr. iij.
Unguenti zinci oxidi benz. ℥ iss.
Lactis sulphuris ℥ j.
Acidi carbolici gr. ij.

Misce, fiat unguentum et signe: Apply locally twice daily.

Internally he was given:

℞ Sodii arsenitis gr. j.
Extracti gentianæ gr. xx.

Misce, fiat pilulas No. xx, et signe: One pill three times a day,

One week later this man returned and was nearly well. Treatment was continued.—*Shoemaker.*

SUBSTITUTE FOR IODOFORM.

Dr. Benjamin has found the following to answer the same purpose as iodoform when used as a surgical dressing:

℞ Zinci oxidi ℥ ij.
Hydrarg. chlor. corros. gr. j.—M.

Subject the oxide of zinc to a temperature of about 200° F. for a few hours before mixing, then mix when cool and place in an air-tight box until ready to use it. This is thoroughly antiseptic and does not possess the disagreeable odor of iodoform.—*Times and Register.*

ANTIDOTE FOR MORPHINE.

Professor Arpad Bokai (*Inter. Klin. Rundschau*) recommends picrotoxin as an antidote for morphine, on the ground that it exerts an antagonistic action to morphine on the respiratory centres; also that it is a powerful stimulant to the vaso-motor centre, and in this respect likewise an antagonistic to morphine; further, that the action of morphine on the cerebrum is directly opposed to that exerted by picrotoxin, and, finally Professor Bokai suggests that the previous administration of a small dose of picrotoxin might reduce the danger of asphyxia in chloroform and narcosis.—*Am. Jour. Pharmacy.*

Acute inflammation of the bladder is immediately relieved by the following mixture taken every two hours: Infusion of uva ursi, ℥iv; bicarbonate of soda. gr. x.—Woodbury—*Times and Register.*

Antiseptic solution for sponges is recommended by Prof. Berrens to be made by dissolving thymol 1, in alcohol 4, and adding distilled water 1,000 parts.—*Gaz. Gynoc.*

SOCIETY PROCEEDINGS.

American Academy of Medicine.

Annual Meeting at Chicago, November 13, 1889.

DR. JOHN H. RAUCH, Secretary of the Illinois State Board of Health, presented the following paper:

ILLINOIS ARMY BOARD OF MEDICAL EXAMINERS.

As a contribution to the history of the regulation of the practice of medicine by the State of Illinois, I submit the results of the work of the Illinois Army Board of Medical Examiners during the war of the rebellion, gathered from the records of the Adjutant-General's office, from reports and papers of Dr. H. A. Johnson, of Chicago, and from my own personal experience and observation.

Although, as shown in our reports on medical education, efforts had been made, from time to time for more than forty years,[1] to establish some test of fitness of those engaged, or offering to engage, in the practice of medicine, the creation of this Army Board and the work which it accomplished were the first practical results in this direction. From the hundreds of medical men who tendered their services with patriotic zeal—often with an excess of patriotism which obscured their recognition of the demands of military service—there were selected a corps of over 660 surgeons and assistant surgeons whose record as faithful, competent, and in many cases brilliant officers was not surpassed by any similar body engaged in the defense of the Union. It is not too much to say that the reputation for endurance, pluck and effectiveness which Illinois troops early won and sustained throughout the war, was due in no small measure to the skill, forethought and devotion of the Illinois medical staff. This has been fully testified to by the highest medical authorities.

These gentlemen, impartially and conscientiously selected solely on the basis of personal worth and professional fitness, went into the service and the field more thoroughly equipped and better qualified for the discharge of their duties than did any other class of volunteer officers, either of the line or the staff. I very distinctly remember the impression created on my own

[1] While still a territory and sparsely settled, only along the river fronts and water courses of Southern Illinois, efforts were already being made by the pioneer practitioners to regulate the practice of medicine and to foster the cause of medical education. In 1817 an Act of the Territorial Legislature—with a preamble reciting that "well regulated medical societies have been found to contribute to the diffusion of true science, and particularly to the knowledge of the healing art"—divided the Territory into two medical districts. All that portion of the Territory lying east of the meridian line, "running due north from the mouth of the Ohio," formed the Eastern Medical District, and that west of said line formed the Western Medical District. For historical summary of these efforts see "Medical Education and the Regulation of the Practice of Medicine in the United States and Canada," "Fifth Annual Report of the State Board of Health of Illinois," p. 52 et seq.

mind when, after having served for some time in departments where Illinois regiments were scarce, a corps composed almost entirely of our own State troops was added to the command in which I was serving as Medical Director. The hospital staff and appointments were in excellent and effective order; the medical and surgical records were complete and intelligently kept; the sanitary discipline and police regulations of the camps were admirable, and, as a result, the proportion of "effectives for duty" was maintained much above the average—in striking contrast to regiments from other States in the same command.

This is said without invidiousness and only as bearing upon the work of the Army Medical Examining Board, the first practical step in Illinois toward regulating the practice of medicine under the authority of the State. It may also, and properly, be said that the survivors of those who were thus selected returned to the State at the close of the war to speedily occupy the foremost places of professional and social influence in their respective communities. About 160 of these are still living, but their ranks are rapidly thinning out, and it has occurred to me, while there is yet time, to put on record in the proceedings of this Board some account of the manner in which the medical staff of the Illinois contingent was provided, and a complete roster of the names of its members. This seems proper as a matter of justice and in the interest of history.

In the organization of the first brigades of Illinois troops the State Legislature, in April, 1861, constituted a Medical Board to carry out the intent of a general order of the War Department, implied in the phrase which authorized the appointment of regimental medical officers, "after having passed an examination by a competent medical board appointed by the Governor of the State." This order was not mandatory, but permissive only, and it was left to the Governors of the several States to determine whether or not it should be carried into effect; in fact it was not, in many of the States, made operative, and medical officers were appointed in some by a State officer known as the Surgeon-General, and in other States by the Governors, on recommendation of regimental officers, civilians or politicians. In the former case, where the selections were made by the Surgeon-General of the State, the appointments were for the most part wise, but not uniformly so; and on the other hand, where there was no medical authority to discriminate between applicants, the two extremes of qualification were found—a few well qualified and a large number of incompetents.

Governor Yates, however, who early won the appellation of the "soldier's friend" by his devotion to those who went forth to battle, seized this opportunity for securing competent medical officers for the 200,000 men which Illinois sent into the field during the war. In one of his papers on this subject Dr. Johnson tells the following incident, which well illustrates the attitude of our great "War Governor" toward the Army Medical Board:

[Extract from "Medical War Memories," by H. A. Johnson, M. D., Chicago, read before the Loyal Legion, Chicago, February 9, 1888; p. 8.]

"During the first week of our work a physician, and an intimate friend of Governor Yates, came before the Board and was found so deficient that we could not recommend him even for assistant surgeon. We had already rejected several candidates of much pretension, and as they were still in Springfield and had, to some extent, the confidence of the colonels who had nominated them, a united effort was made to override the action of the Board. We were represented as either ignorant or prejudiced, our examinations were characterized as technical, and our decisions influenced by personal friendship, or by other unnamed motives.

"On the evening of the day when the Governor's friend was sent back the Governor came to my room and asked why Dr. —— had not been recommended? I told him that the Board gave the doctor a patient hearing and that the answers to practical questions, as well as his written dissertation, made it impossible for us to ask for his appointment. That as we were made the judges of qualification, we must do our duty in that station in which it had pleased the Governor of Illinois to place us. He replied, 'I am extremely sorry that Dr. —— has failed to pass, but I am not surprised.' Then turning to me he added, 'For our boys who go from home and its comforts to the battlefield and its dangers I want to do the very best I can, and I pledge you that I will commission no one as surgeon or assistant surgeon, whom you cannot recommend.' This promise he kept very faithfully, and although for a few days there was a great clamor for the scalps of the Medical Board, there came from the Executive chamber no further questioning as to reasons for our action."

As first constituted the Illinois Army Board of Medical Examiners consisted of Drs. N. S. Davis, of Cook County, Charles Ryan, of Sangamon County; Geo. W. Stipp, of McLean County; William M. Chambers, of Coles County, and Dr. Carpenter, of St. Clair County. Candidates were required to pass an examination before this Board and obtain its recommendation as a condition of appointment and commission. As time developed the need for further troops, and new calls were made, the Medical Board was reorganized June 14, 1861, under General Order No. 25 of the War Department. This new Board consisted of Drs. Hosmer A. Johnson, of Chicago: Henry Wing, of Collinsville; Henry W. Davis, of Paris; O. M. Bryan, of Sycamore, and Robert Roskotten, of

Peoria. Dr. Davis was subsequently appointed Surgeon of the Eighteenth Illinois Infantry, and Dr. D. H. Green, of Salem, was appointed to fill the vacancy. Dr. Bryan and Roskotten were promoted to the positions of brigade surgeons in the fall of 1861, and during the greater part of 1862 the Board consisted of Drs. Johnson, Wing and Green. In the fall of 1862 Dr. A. L. McArthur, of Joliet, and Dr. Daniel Brainard, of Chicago, were appointed to fill the vacancies created by the promotion of Drs. Bryan and Roskotten. Dr. Johnson, as President of the Board, continued to devote himself to this work, and to frequent inspections of the sanitary and medical condition of Illinois troops, as well as to active service in the field on occasion, until February, 1865; and the experience thus gained has since been continuously employed most usefully for the public and the profession in the broad field of preventive medicine and in the various health services of the city of his residence, of the State and the Nation.

At the date mentioned, February, 1865, Drs. Johnson and Wing resigned. Dr. Rufus S. Lord, of Springfield, was appointed a member, and the Board was thenceforth, until the close of the War —two months later—composed of Drs. Brainard, Green and Lord.

Drs. Wing, Brainard, Green and Lord are long since dead, and Dr. McArthur recently; Drs. H. A. Johnson, N. S. Davis, W. M. Chambers, O. M. Bryan and Robert Roskotten still survive.

The first session of the permanent Board—appointed June 14, 1861—was held in the city of Springfield on the 18th day of June, 1861, when an organization was effected by the election of H. A. Johnson, President, and O. M. Bryan, Secretary. Subsequently, upon the resignation of Dr. Bryan, Dr. Wing was elected Secretary.

Soon after its organization the Board received a letter from the Secretary of War, instructing it to be governed by the Army regulations: "To investigate carefully the physical ability, moral character and professional attainments of each candidate, and to report favorably for appointment and promotion in no case admitting of a reasonable doubt."

In order to accommodate the candidates as far as possible, sessions of the Board were held at Springfield, Chicago, Cairo, Alton and in the field.

I quote the following verbatim from the report of the Board, made December 13, 1862, to Adjutant General Fuller, showing the work accomplished during the first nineteen months:

"The whole number of candidates whose names have been registered on our books is 793. The whole number examined, as reported in the list which accompanies this, is 495. Of these 159 have been recommended for the office of Surgeon; 266 have been recommended for the office of Assistant Surgeon; and 70 have been rejected.

"In addition to these cases reported, a very considerable number of candidates, after a partial examination, have become conscious of their deficiencies, and have requested permission to withdraw their application. This request has, we believe in every case, been granted, with the understanding that it was not to be made a matter of record, and that they were in all respects to be considered as unexamined.

"There is still another class of cases in which the examinations are not yet completed. Men of good moral character, and with the ability to be useful, but who are deficient in some one department of medicine or surgery, have, in several instances, been advised to withdraw for a time, and to devote themselves to study with reference to a further examination. These cases are still unrecorded.

"For convenience we may divide the candidates into three classes:

"1. Those whose study and practice have made them familiar with the whole field of medicine and surgery. This class is necessarily very small, but the Board is happy to know that there are such men in the service.

"2. Those who, assuming the title of doctor, have never received the first rudiments of a medical or surgical education. As a general rule, we have found their ignorance only equaled by their impudence. It is unfortunate that these men have often gained the confidence of regiments and the nomination of Colonels to the exclusion of better but more modest applicants.

"3. By far the larger proportion of those who have presented themselves have been men of moderate attainments, capable of much usefulness in private practice, but unaccustomed to study, and able only with difficulty to express their ideas or demonstrate their knowledge.

"In the examination of the first and second classes, but little time has been consumed, but in order to judge correctly of the third class, much patience has been necessary. The habits of mind, methods of reasoning and probable action in any given case, have been subjects of study, and the Board has often been compelled to form a judgment not so much upon the actual knowledge developed in the examination as upon the evidences of good sense, sound judgment and adaptation to the service. The examinations have consisted in an investigation:

"1. Of the moral character of the candidate.

"2. Of his professional character.

"3. His experience and adaptation to the work.

"4. His knowledge of his profession."

During the War a total of about 1,250 applicants were examined by this Board in the manner already described, and 664 were recommended for appointment and commission—188 as Surgeons and 476 as Assistant Surgeons. Of these latter 114 were subsequently reëxamined and promoted to the rank of Surgeon.

The professional and personal character of the men thus selected was so high that—although many of them had not graduated in medicine and consequently were without the diploma specified in the Medical Practice Act as entitling its possessor to the certificate of the State Board—the credentials of this Army Medical Examining Board were accepted as proof of the qualifications required by the Act, and the survivors in 1877 were registered as certificated physicians by the formal action of the State Board.

Of this number, I take pleasure in saying, there was only one who was dismissed the Army. As nearly as I can ascertain, of the total number who passed this Examining Board, there are only 240 now living. They will be found, as a rule, to be among the most reputable and prominent practitioners in the communities in which they reside. A roster of all who passed this examination will be printed in the forthcoming Tenth Annual Report of the Illinois State Board of Health.

NECROLOGY.

David Prince, M.D.

We are pained to record the death of Dr. David Prince, who died at his residence in Jacksonville, December 19, aged 73 years. His last illness was pneumonia, and he suffered but a few days.

Dr. Prince was born in Brooklyn, Windom county, Conn., June 21, 1816. Later he removed with his parents to Canandaigua, N. Y., where he was educated at the academy. Then he began the study of medicine at the College of Physicians and Surgeons, New York, and completed it at the Ohio Medical College at Cincinnati. At the latter city he assisted for a year and a half the distinguished surgeon, Dr. Muzzy.

In 1843 he moved to Jacksonville, and for five years was professor of anatomy in Illinois College. During his professorship, Dr. H. K. Jones, of that city, and Dr. Wing, of Collinsville, were graduated from the department. For three years he practiced at St. Louis and delivered a course of lectures on surgery at the St. Louis Medical College. In 1852 he returned to Jacksonville. Fifteen years later he bought Judge Thomas' property on South Sandy street, and established the sanitarium, which has ever since enjoyed uninterrupted prosperity and an extended reputation, and has proved invaluable to hundreds of patients who have been treated there.

Dr. Prince paid especial attention to surgery, and he was a famous expert in that line of medicine, both as an operator, a student, an inventor and a writer. He knew surgery thoroughly in every detail. He was a man of progressive ideas also. He read all the current literature on the subject, even French and German publications in the original, and he kept thoroughly abreast of the times. When any new thing met with his approval he adopted it. He wrote numerous pamphlets and periodical articles which have enjoyed an extensive circulation and a high authority among the profession. His treatise on Plastics and Orthopædics has been used as a text book in medical colleges. He visited Europe twice, once as a delegate to the international medical congress at London in 1881, and later to the Copenhagen congress in 1884. On these occasions he visited the hospitals in London, Paris and Berlin, and made careful investigations at them. During the latter part of the war, for fourteen months, he was brigade surgeon in Graves' brigade, Army of the Potomac. When soldiers of his brigade were captured and sent to Libby prison, he voluntarily gave himself up and went along with them in order that he might attend them. He was a prisoner himself, but was accorded special privileges, such as walking about the city with a guard. At the close of the war he was employed at New York ten months by the sanitary commission in writing of the medical history of the war. He was a prominent and valuable member of many societies, among them being the International Medical Congress, the American Medical Association, the American Association of Railroad Surgeons, the American Surgical Association, the Illinois State Medical Society, of which he was once president, the National Public Health Association, the Morgan County Medical Society, of which he was a founder and charter member, the Tri-State Medical Society, the Jacksonville Microscopical Society, and the Club, one of the strongest of Jacksonville's literary societies. He enjoyed the friendship and esteem of many distinguished medical men, among them being Dr. Hamilton, of New York, and Dr. N. S. Davis, of Chicago. He was the first man in the State of Illinois to administer ether.

Dr. Prince was a man of magnificent brain and splendid character. Not in medicine alone, but in all knowledge he was learned and profound. Almost everything that pertained to the welfare of mankind interested him, and his interest was not only passive and contemplative. It was active and energetic. He was a philanthropist. He gave money liberally. He gave his time and skill many times to patients without charge to them. He was one of Jacksonville's most public-spirited citizens. He helped along many public enterprises. The public welfare was his private care, and he promoted it by every means in his power. On all public questions his pen was quick to furnish valuable suggestions in communications to the press, which were remarkable for the thoroughness and impartiality with which the subject had been investigated and

considered. He was a clear, cool-headed, far-sighted student and thinker, a man who liked to investigate everything fully and carefully with an eye single to arriving at the truth. He was a member of the Board of Education for many years, and in that capacity rendered the schools of the city invaluable services. The death of Dr. Prince is a calamity to the profession, to the city and to his family.—*Peoria Med. Monthly.*

BOOK REVIEWS.

FOODS FOR THE FAT. A Treatise on Corpulency and a Dietary for Its Cure. By NATHANIEL EDWARD DAVIES, M.R.C.S. American Edition. Edited by CHARLES W. GREENE, M.A., M.D. Pp. vii, 138. Cloth, 75 cts. Philadelphia: J. B. Lippincott & Co. 1889. Chicago: A. C. McClurg & Co.

In this work, after a short discussion of the relations subsisting between food and corpulency, in which the various systems for the reduction of superfluous fat are briefly considered, the author spreads before us a vast array of very enticing dishes of which we are assured that the most corpulent of mankind may partake freely and with benefit. Particular attention is given to the uses of saccharin in the treatment of corpulency, and the author informs us that from personal experiments he can assure us that for all household purposes where it has been necessary to use sugar saccharin is a perfect substitute. The author does not aim at the very rapid reduction of weight, but rather at the sure and safe removal of unnecessary burdens of fat.

ABDOMINAL SURGERY. By J. GREIG SMITH, M.A., F.R.S.E., Surgeon to the Bristol Infirmary, Lecturer on Surgery Bristol Medical School, late Examiner in Surgery University of Aberdeen, Fellow of the Royal Medical and Chirurgical Society, London, Honorary Fellow of the American Society of Obstetricians and Gynecologists, etc. Third edition. Pp. 800. Philadelphia: P. Bakiston, Son & Co. 1890.

Some indication of the necessity for such a work as the one before us may be drawn from the fact that it has passed rapidly to a third edition in two years. The work is exactly what it purports to be—a systematic work on abdominal surgery thoroughly revised to date. The designer's scope can be readily obtained from a glance at the headings of the sections, which are fourteen in number, and as follows:

I. Diagnosis of Abdominal Tumors.
II. Abdominal Operations Considered Generally.
III. Operations on the Ovaries, the Fallopian Tubes and the Broad Ligaments.
IV. Operations on the Non-Gravid Uterus.
V. Operations on the Gravid Uterus, and for Ectopic Gestation.
VI. Operations on the Stomach.
VII. Operations on the Intestines.
VIII. Operations on the Kidneys.
IX. Operations on the Liver and Gall Bladder.
X. Operations on the Spleen.
XI. Operations on the Pancreas.
XII. Unclassified Operations.
XIII. Supra-Pubic Cystotomy.
XIV. Operations for Abdominal Injuries and Inflammations.

To the work is appended a comparatively exhaustive bibliography, not by any means an unimportant addition to any comprehensive scientific treatise. The style of the writer is good, and the method, together with the well selected subject matter, makes a very entertaining and instructive book for the student and a valuable reference book for the surgeon. The illustrations, while not elaborate, are well conceived and executed. The work gives one the impression of being the outcome of the labors of a practical surgeon, and it certainly is; and while the views of the author on antiseptic methods may not gain for him the unqualified applause of the extreme germicidists, they will certainly be found consistent with successful surgery. The publishers' work is excellent.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Fourth session, held in Washington, D. C., Sept. 18, 19 and 20, 1889. Philadelphia: Wm. J. Dornan. 1889.

This volume contains nineteen papers, which are remarkable for the uniformity of their excellence. All the papers are on subjects relating to internal medicine, and most of them exhibit a large amount of original research. No better work can be shown by any Society.

A HANDBOOK OF DERMATOLOGY FOR THE USE OF STUDENTS.—By A. H. OHMANN-DUMESNIL, A.M., M.D., Professor of Dermatology, St. Louis College of Physicians and Surgeons; Consulting Dermatologist to the St. Louis City Hospital, etc. Illustrated. Pp. viii, 167. St. Louis: St. Louis *Med. and Surg. Journal* Publishing Co.

This is one of a growing class of books instigated by the request of students to their teachers for a *résumé* of forthcoming lectures. It is not intended, as the writer frankly admits, "to fill a long felt want, but rather as a guide to students in their reading." Employed in this manner it may certainly be of advantage to such readers, but it is no more than an outline of the subject of dermatology, and can in no wise serve as a substitute for the complete works. The author has done well in giving the synonyms, scientific and vulgar,

for the most approved names of the diseases considered. This is often of no small advantage to the student.

Transactions of the Thirty-ninth Annual Meeting of the Illinois State Medical Society, held in Jacksonville, May 21–23, 1889. Cloth. Pp. xxxiv, 409. Chicago: Jameson & Morse Co.

The work of this Society for the present year is of a very creditable character. In all thirty-four papers, covering a wide range of topics, were read. Much interest was evidently manifested in the proceedings, and the members present were agreed that the meeting was one of the most successful ever held by the Society. The Transactions appear in particularly good form; indeed, it is not too much to say that the volume may well serve as a model for reports of this character.

The next meeting of the Society will be held in Chicago, beginning Tuesday, May 20, 1890.

Ninth Annual Report of the State Board of Health of New York. Transmitted to the Legislature February 26, 1889. 8vo, paper. Albany. 1889.

The text proper of this very voluminous report comprises 609 pages; but an equal amount of "bulk" is added consisting of maps and diagrams, many of which are of little or no value, and could have been left out without injury to the report. If such reports as the above are worth publishing at all, they are certainly worth preserving, and should be put up in a more durable and less clumsy style than the present pamphlet form. However, the report shows that the Board is doing much valuable work. The report of the Public Analyst is interesting, but much of his work is of value only from a commercial standpoint and not as affecting the public health.

Saunders' Question-Compends, No. 5, Essentials of Obstetrics. Arranged in the form of questions and answers; prepared expressly for students of medicine by William Easterly Ashton, M.D., Dem. of Clin. Obstet. in Jefferson Med. Col., Chief of Clinics for Diseases of Women in Jefferson Med. Col. Hosp., etc. Illustrated. Tenth thousand. Pp. xi–220. Philadelphia: W. B. Saunders. London: Henry Renshaw. Melbourne: George Robertson & Co. 1890.

This book is one of the very best of the Saunders series. The subject is treated in a remarkably clear and concise manner, with due regard to the proportionate representation of its various branches. The book is thoroughly well prepared and is carefully indexed. It cannot fail to subserve a useful purpose in the direction indicated.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Practice of Medicine.

The officers of the Section of Practice of Medicine request all those who desire to read papers in that Section at the meeting of the American Medical Association, to be held in Nashville, Tenn., May 20–23, to send the titles thereof to either of the undersigned before Feb. 15, 1890.

J. H. Musser, Chairman,
N. E. cor. 40th and Locust Sts., Philadelphia, Pa.
H. McColl, Secretary,
Lapeer, Mich.

Section of Laryngology and Otology.

All those who desire to read papers before the Section of Laryngology and Otology, at the next meeting of the American Medical Association, to be held in Nashville, Tenn., May 20–23, are requested to send the titles of the same to either of the undersigned before February 15, 1890.

John O. Roe, M.D., Chairman,
28 N. Clinton St., Rochester, N. Y.
Frank H. Potter, M.D., Secretary,
273 Franklin St., Buffalo, N. Y.

MISCELLANY.

The Epidemic.—What name shall be given to the tiresome, if not grave, epidemic which in less than a month has overrun Europe from North to South, and which is now spreading to the New World? Is it the grippe, the dengue, or the influenza? At the Société Médicale des Hôpitaux there is no more harmony of opinion on this score than at the Société de Médecine Pratique or the Académie. M. Legroux regards it as an atypical grippe; Sevestre and Chauffard consider it as a twin disease, one feature of which is the classical grippe, and the other a disease characterized by important phenomena, such as pain, eruption and absence of catarrh; Nicolas and Rousel recognize in it the dengue.

At the Académie Proust declared that the real epidemic presents neither the phenomena of the dengue nor those of the classical grippe. Brouardel, comparing the epidemic with earlier ones that have preceded it, accounts of which have been preserved, pronounces in favor of the grippe, in spite of the absence of catarrh. Léon Colin adopts the same opinion, as does also M. Bouchard, but for other reasons, mainly those associated with the contagious character of the disease. Dujardin-Beaumetz and Bucquoy refrain from committing themselves, but incline to the opinion that the disease is the dengue, the characteristics of which have been modified by its invasion of the cold countries.—*L'Union Méd.*

Medical Society of the District of Columbia.—At the stated meeting of the Medical Society of the District of Columbia, held January 6, 1890, the following officers were elected for the year 1890: President—Swan M. Burnett, M.D.; Vice-Presidents—George N. Acker, M.D., and G. Wythe Cook, M.D. Treasurer—C. W. Franzoni, M.D.; Recording Secretary—Samuel S. Adams, M.D.; Corresponding Secretary—Thomas C. Smith, M.D.;

Librarian—J. H. Mundell, M.D.; Board of Examiners—Geo. N. Acker, M.D., Samuel S. Adams, M.D., C. H. A. Kleinschmidt, M.D., H. L. E. Johnson, M.D., and Llewellyn Eliot, M.D.; Board of Censors—John T. Winter, M.D., L. L. Friedrich, M.D., and George C. Ober, M.D.

PROF. VIRCHOW is engaged upon a new edition of his "Cellular Pathology," which he intends to publish on the occasion of the International Medical Congress. The last (fourth) edition of this work appeared in 1872.

FOREIGN PHYSICIANS PRACTICING IN FRANCE.—In compliance with numerous demands on the part of the medical profession, which complains of the large number of foreign physicians engaged in practice in France, the Minister of Public Instruction has just decided that no authority will be granted to foreigners to practice medicine in France except after thorough enquiry regarding their fitness, together with an examination of the worth of the diplomas which they present.

HEALTH IN MICHIGAN.—For the week ending January 4, 1890, the postal card reports indicate that scarlet fever, influenza, puerperal fever, cerebro-spinal meningitis, inflammation of brain, remittent fever, membranous croup, cholera infantum and cholera morbus increased, and that measles, typhoid fever, whooping-cough and dysentery decreased in area of prevalence. (Influenza increased 103 per cent. over the preceding week.)

At the State Capital the prevailing winds for the week ending January 4 were southeast, and compared with the preceding week the temperature was lower, the absolute humidity was less, the relative humidity and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present during the week ending January 4 and since at 27 places—Bainbridge tp., Breitung tp., Caseo tp., Detroit, Evart, East Saginaw, Genesee tp., Grand Rapids, Gaines tp., Howell, Hastings, Hillsdale, Kalamazoo, Lansing, Muskegon, Manistee tp., Richland tp., Rich tp., Ravenna tp., Saginaw, Spalding tp., Tarch Lake tp., Taylor tp., Texas tp., Trowbridge tp., West Branch and Winfield tp.; scarlet fever increased by 83 per cent. and was reported at 33 places—Brighton, Bliss tp., Center tp., Carunna, Concord, Caledonia tp., Dundee, Denver tp., Detroit, East Tawas, Eagle tp., Fabius tp., Grand Rapids, Grass Lake, Howell, Howell tp., Howard City, Kalamazoo, Keeler tp., Metamora tp., Muskegon, Monroe, Newberg tp., New Buffalo, Novi tp., Newton tp., Plymouth, Superior tp., Spring Lake, Sand Beach tp., St. Johns, West Branch and White Water tp.; typhoid fever at 18 places—Albion, Cadillac, Cannonsburg, Corunna, Clam Lake tp., Detroit, Deerfield tp., Grand Rapids, Gladstone, Muskegon, Maple Grove, Metamora tp., North Star tp., Penn tp., Richland tp., Taylor tp., Wyandotte and Wakefield tp.; measles decreased by 64 per cent., and was reported at four places—Charlotte, Fowler, Grand Rapids and Otsego.

LETTERS RECEIVED.

Dr. S. E. Strong, Pilot Knob, Mo.; Dr. A.W. Strickler, Scottdale, Pa.; Dr. Wm. Barton Hopkins, Philadelphia; F. C. Lewis, Catskill, N. Y.; T. W. Hannaford, London, Eng.; Dr. W. H. Seibert, Steeltin, Pa.; Dr. Philip Coombs Knapp, Dr. Henry O. Marcy, Harvard Medical School, Boston; E. Steiger & Co., New York; Dr. W. M. Harsha, Chicago; E. P. Donnell Mfg. Co., Chicago; Dr. J. W. Small, New York; Dr. Harold N. Moyer, Chicago; Chicago, Milwaukee and St. Paul Ry., Milwaukee, Wis.; The Subscription News Co., Chicago; Dr. D. Bernardino Collins, Muscoda, Wis.; Dr. W. H. Oliver, Fernwood, Ill.; American and Continental Sanitas Co., New York; Mrs. Brevington, St. Mary's, O.; W. H. Sheiffelin & Co., New York; Dr. Gershom H. Hill, Independence, Ia.; Stanley Day, New York; Paris Medicine Co., Paris, Tenn.; Chesebrough Mfg. Co., New York; Londonderry Lithia Spring Co., Nashua, N. H.; Fairchild Bros. & Foster, New York; Dr. L. C. Loomis, Washington, D. C.; Dauchy & Co., New York; Dr. Hugh Hamilton, Harrisburg, Pa.; Dr. Joshua M. Cooper, Meadville, Pa.; Dr. Geo. Seiler, Alma, Wis.; Dr. R. M. Wyckoff, Brooklyn, N. Y.; Dr. John F. Moran, Washington, D. C.; J. H. Bates, New York; Battle & Co., St. Louis, Mo.; Dr. M. Donelly, New York; Travers E. Gooding, Paris, Tex.; Dr. M. M. Togg, Hightstown, Pa.; Dr. J. T. Kane, Patterson, N. J.; Philadelphia Polyclinic, Philadelphia; Dr. J. M. Barrier, Illawara, La.; Lambert Pharmacal Co., St. Louis, Mo.; Horlicks Food Co., Racine, Wis.; Doliber, Goodale & Co., Boston, Mass.; Dr. Wm. W. Pearse, Waukegan, Ill.; Rio Chemical Co., St. Louis, Mo.; W. P. Cleary, Brooklyn, N. Y.; Woman's Medical College, New York; Dr. L. G. North, Tecumseh, Mich.; Parke, Davis & Co., Detroit, Mich.; Dr. L. S. Trowbridge, Detroit, Mich.; Dr. H. Soule, Ann Arbor, Mich.; Dr. Seely, Faribault, Minn.; Dr. A. E. Campbell, New Holland, Ill.; Dr. John O. Roe, Rochester, N. Y.; Dr. H. Wardner, Anna, Ill.; Dr. H. Holbrook Curtis, New York city; Dr. H. McColl, Lapeer, Mich.; Dr. A. H. Carpenter, Milwaukee, Wis.; Dr. J. H. Brooks, Dixon, Ill.; Dr. F. S. Crossfield, Hartford, Conn.; Hance Bros. & White, Philadelphia; Dr. Henry B. Baker, Lansing, Mich.; Dr. Herbert C. Jones, Decatur, Ill.; Chas. Stover, Amsterdam, N. Y.; Dr. S. C. Plummer, Jr., La Verne, Minn.; J. H. Bates, New York City; Dr. S. T. Gray, Albia, Ia.; Dr. Arthur Sweeny, St. Paul, Minn.; Dr. Fred Dunn, Council Grove, Kan.; Dr. J. W. Long, Byan, O.; Dr. W. Brodie, Detroit, Mich.; Dr. James Milligan, Indianapolis, Ind.; Dr. M. G. Parker, Lowell, Mass.; The Kenyon News and Postal Subscription Co., Chicago.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 11, 1890, to January 17, 1890.

By direction of the President, Major Leonard Y. Loring, Surgeon, will report in person to Col. Benj. H. Grierson, Tenth Cavalry, President of the Army Retiring Board at Los Angeles, Cal. Par. 3, S. O. 6, A. G. O., January 8, 1890.

By direction of the Secretary of War, Capt. R. B. Benham, Asst. Surgeon, is relieved from duty in the Dept. of the Platte, to take effect upon the abandoning of Ft. Laramie, Wyo., and will then report to the commanding officer at Madison Bks., N. Y., for duty at that station. Par. 8, S. O. 6, A. G. O., January 8, 1890.

Capt. Charles S. Black, Asst. Surgeon U. S. A., leave of absence granted by the commanding officer, Ft. Duchesne, Utah, is hereby extended twenty-three days, with permission to apply to the Adjutant General of the Army for an extension of three months. Par 3, S. O. 1, Dept. of the Platte, January 11, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 18, 1890.

P. A. Surgeon H. B. Scott, granted extension of sick leave for one year from February 1.

Medical Inspector Geo. W. Woods, from Mare Island Navy Yard and to the U. S. S. "Charleston."

Surgeon Ezra Derr, detached from the U. S. S. "Nipsic" and ordered home.

Surgeon Dwight Dickinson, from Mare Island Hospital and to the Navy Yard.

P. A. Surgeon L. B. Baldwin, ordered to the U. S. S. "Michigan."

P. A. Surgeon F. J. B. Cordeiro, from hospital, Mare Island, and to the "Nipsic."

P. A. Surgeon J. M. Edgar, from the U. S. S. "Michigan" and to the Naval Hospital, Mare Island, Cal.

Asst. Surgeon T. B. Bailey, from the U. S. S. "Dale" and to the U. S. S. "St. Louis."

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ORIGINAL ARTICLES.

THE INDICATIONS FOR, AND LIMITATIONS OF, THE OPERATION FOR THE REMOVAL OF THE UTERINE APPENDAGES.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY E. E. MONTGOMERY, M.D.,

PROFESSOR OF GYNECOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE, OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL.

The enthusiasm engendered by a new remedy or new surgical operation is likely to lead to its application in directions scarcely dreamed of by its originators, an application which, very frequently, the sober judgment of the future will not sustain. Probably no operation has had a more widely extended application, no operation is fraught with more beneficial or injurious influences, as the indications for it may be correctly or incorrectly interpreted, than that for the removal of the uterine appendages.

An operation which is capable of modifying the whole future of the individual, and her relation to those about her, should have its indications clearly set forth and the limitations within which it should be performed distinctly outlined. In studying the history of the procedure we find it introduced and advocated upon three lines of indications: 1. To bring about the menopause in what are known as the neuroses. 2. For the relief of symptoms arising from pathological conditions in the tubes and ovaries. 3. For the purpose of establishing the menopause, because of grave and threatening disease in the uterus. While the general aims of the operation as here expressed are entirely legitimate, when confined to properly selected cases, it cannot be denied that the operation has been considered as indicated, and has been performed upon many women who might have recovered equally as good health without mutilation.

The indications for operation may very properly be divided into physiological and pathological. The former comprises those done with a view to the establishment of the menopause, without any reference to the presence of pathological conditions in the organs removed. The latter is done for the removal of diseased organs primarily, and may be partial or complete.

The pathological division may be classified as follows:

A. The ovaries:

1. Inflammation, acute, chronic, suppurative (abscess) and perioöphoritis.
2. Displacement (prolapse, hernia).
3. Cirrhotic and cystic ovaries.

B. The Fallopian tubes.

1. Inflammation, salpingitis.
2. Pyosalpinx.
3. Hæmatosalpinx.
4. Hydrosalpinx.
5. Fallopian pregnancy.

To the physiological class should be assigned:

A. The uterus:

1. Uterine myomata.
2. Errors of development, absence or maldevelopment of the uterus, with menstrual molimen.
3. Insuperable displacements, with severe nerve symptoms.
4. Insuperable obstruction to menstrual flow (may reside in the vagina).
5. Chronic metritis (areolar hyperplasia), with repeated abortions.

B. The neuroses:

1. Mania, puerperal mania, menstro-mania, nympho-mania, etc.
2. Epilepsy, hystero-epilepsy, convulsions, cramps, dancing fits, etc.
3. Hysteria.

It is true that it is difficult to draw the line in making the distinctions herein mentioned. Many of the cases operated upon from a physiological standpoint will be found to present pathological changes; but when these conditions are so insignificant as to present no physical signs, and do not ordinarily produce symptoms necessitating operation, they may justly be classed as suggested. In the development of the operation it has frequently been done as an empirical measure, without the indication either from a physiological or pathological standpoint being unquestionably marked. The physiological division has more probably afforded opportunity for the greatest abuse of this operation. All varieties of disordered nerve manifestation are likely to be ex-

aggerated preceding and during the menstrual period, which has led to radical operations when little was to be gained thereby.

The removal of the appendages in mania and epilepsy should be considered as indicated only when we can trace, either in the origin or progress of the disease, a close association with the performance of their function. It will not be sufficient to show that during the menses the individual is more likely to suffer with epileptic seizures, or to have an exaggeration of the intellectual derangement, but that the trouble either originated in menstrual disturbance, or in a marked degree occurs with the menstrual periods, and infrequently, or to a slight extent only, in the intervals. Where the disordered nerve condition can be traced to the influence of the sexual system, the removal of the appendages, with the consequent cessation of the periodical congestion, has been attended with the most delightful results. On the other hand, where the operation has been done upon mistaken premises the benefit has been unattained.

It is not to the credit of our humanity that a poor woman, so unfortunate as to be bereft of her intelligence, should be obliged to undergo the danger and discomfort of an operation of doubtful utility. Nympho-mania affords no hope of abatement through this operation. The ovaries and tubes, as have been well established in operations upon man and the lower animals, do not govern the sexual appetite or the power to gratify it. The orientalists recognized that the removal of the analogue of the ovary in the male, the testicle, did not destroy the desire or the ability for coition, and amputated the penis of the eunuch, in addition to castration. Hence, the only plea for the operation in this form of disease should be the prevention of conception. The writer has seen the appendages removed to arrest the practice of masturbation, but without the slightest favorable influence.

Hysteria, with its hydra-headed manifestations, has afforded a prolific field for the practice of this procedure. Many cases, as experience has shown, could have been equally as effectually relieved by other plans of treatment, and have preserved their power of performing a woman's every function. Certainly in every such case the operation should be held as a *dernier ressort*, and then performed only after a full knowledge upon the part of the patient of the influence it is likely to exert upon her future life.

The wisdom of establishing artificially the menopause should not be questioned where the uterus is absent or faultily developed, with an effort apparent upon the part of nature to establish the menstrual flow; in uterine displacements, non-restorable to proper position and producing marked nerve symptoms; in cases of obstruction to the menstrual flow, congenital or acquired, whether existing in the vagina or in the uterus, when it is evident that these conditions cannot otherwise be readily and successfully overcome.

Chronic metritis, or the condition known as areolar hyperplasia, has been given as an indication for the operation. It cannot be disputed that in some cases of this disease, where, if anything, the state of inflammation exaggerates the susceptibility to pregnancy, and at the same time renders the uterus incapable of retaining and nourishing the developing ovum, the production of the menopause would add greatly to the comfort and health of the individual. The difficulty, however, of determining the cases in which it is expedient, and the danger of its abuse, should render its performance infrequent.

The utility of the removal of the appendages for the arrest of hæmorrhage and growth in uterine myomata has been too frequently demonstrated to be questioned. Many authenticated cases have been recorded in which the operation has been followed by immediate arrest of hæmorrhage and subsequent marked decrease in the size of the tumor. It should be remembered, however, that the operation is not always followed by the menopause. Several patients operated upon by the writer have subsequently suffered from bloody discharge, in some amounting to hæmorrhage; one has menstruated regularly for two years, another for six months. In consideration of this it has seemed preferable, when feasible, to do a supra-vaginal hysterectomy.

The pathological division affords a field in which the indications for operation are more readily and accurately determined, and yet one in which the propriety of the procedure in individual cases may be questioned. Suppurative inflammation in the ovary or tube should be considered a positive and imperative indication for the operation; the only question should be as to how soon the procedure can be accomplished. The condition is one of danger to the patient so long as it remains—far greater, indeed, than she would experience in its removal. This condition will be found complicated with chronic peri- or para-metritis, acute attacks of which it is frequently the cause. Indeed, it may be accepted as good practice, when a patient suffers from recurring attacks of either trouble, to make an exploratory incision, with a view to the removal of the offending organs.

The presence of chronic inflammation in the ovaries and tubes is not necessarily an indication for operation. Many such cases readily recover under less severe and dangerous plans of treatment. Polk and Imlach have done good work in demonstrating that the separation of adhesions and shortening the broad ligaments by suitably applied sutures will prove curative in conditions that were supposed to positively iudicate the necessity for the removal of the appendages. The

aim of the gynecologist should be to restore, rather than destroy diseased organs. It is not infrequently found that pain in the ovarian region and its attendant reflex phenomena is due to bands of adhesion between the ovary and loops of the intestine. The peristaltic action of the latter keeps the organ in a continuous state of congestion and irritation. Separation of these bands relieves the pain and discomfort, curing the patient as effectually as would the removal of the ovaries. We have a similar train of symptoms induced when the uterus is retroverted and the ovaries bound down by pelvic adhesions. Many of these cases do not require laparotomy in order to bring about a cure. Several have come to the writer's notice where he has been able, by passing two fingers in the rectum and pressing up the cervix, with the thumb in the vagina, to tear off the rectum from the uterus and set free the appendages. It is true that this plan of procedure is only applicable where the adhesions are of limited firmness. In extensive and firm adhesions the danger of laceration of the tube or the ovarian structure would be too great.

Oöphorraphy offers the preferable method of dealing with ovarian displacement, unless caused by marked enlargement from chronic disease.

The inflammatory adhesions, the complete destruction of function, and the reflex phenomena arising from the diseased condition, make removal of the appendages advisable in the majority of cases of hydro- and hæmatosalpinx.

No one can practice abdominal surgery without appreciation of the great boon the introduction of this operation has been to suffering woman, and we cannot do better, in conclusion, than to urge:

1. That the operation for the removal of the appendages should be promptly performed in every case in which it is evident that relief can not be otherwise secured.

2. It should be considered as a *dernier ressort* where there is a hopeful prospect of restoration to health by less dangerous methods, or without the sacrifice of the reproductive function.

3. Its consideration should be dismissed in every case capable of restoration to health by other plans of treatment.

1818 Arch street.

THE USE OF MENTHOL IN DISEASES OF THE UPPER AIR-PASSAGES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY FRANK HAMILTON POTTER, M.D.,

BUFFALO, N. Y.

LECTURER ON DISEASES OF THE NOSE AND THROAT, MEDICAL DEPARTMENT, NIAGARA UNIVERSITY.

The object of this paper is to present a clinical report on the use of *menthol* in the diseases of the upper air-passages. The writer's attention was first called to this drug in this connection by some remarks of Rosenberg on a paper by Krause, of Berlin, entitled "The Therapy of Laryngeal Phthisis," read in the Laryngeal Sub-section of the Fifty-ninth Meeting of German Naturalists and Physicians in Berlin, September, 1886. Since that time Rosenberg has contributed several papers on this subject, and other writers also have occasionally considered it. Most of the studies, however, that are on record relate to the action of menthol on laryngeal disease, and that chiefly of tubercular origin or arising in tuberculous patients.

Prompted by the favorable opinions expressed by all writers in regard to the use of the drug in the diseases just mentioned, it occurred to me to use it in the inflammatory diseases as seen in the nose, pharynx and mouth as well as in the larynx. The results obtained with it from the date first alluded to to the present time are here presented. These results will be given in a general way and dry statistical detail will be avoided as much as possible.

In reporting the observations concerning the action of any single remedy there is always considerable danger of claiming more for it than a careful study of the facts will warrant. The enthusiasm of the observer may lead him to attribute to it much that rightfully belongs to the natural reparative processes. If this mistake has been made further observation will, no doubt, correct it. I can only say that no discrimination has been exercised, and that favorable and unfavorable results have been alike noted at the time of observation and carefully reconsidered in making this report.

Your attention is first directed to the way the drug has been used. Combinations with other drugs have been almost entirely avoided. Menthol has been simply dissolved in an oil in strengths varying from 1 to 40 per cent.; olive oil is preferred by most writers, but I have used one of the fluid vaseline preparations called *oleum petrolina*. Dr. E. L. Shurley, of Detroit, I believe, was the first to call attention to this preparation. It is almost without odor, unchanged by temperature, and of a consistency easily sprayed by any atomizer with a moderately large orifice to the spray tube. Tubes made on the Sass or Devilbiss patterns, or the hand and office atomizers made by the Davidson Rubber Co., numbered 52, 59 and 65, answer the purpose thoroughly. These last are especially mentioned because great difficulty was experienced in obtaining an atomizer that would spray an oily fluid. Most of those advertised for that purpose fail to meet the requirements. Menthol has also been used by means of vaporization and inhalation, and applied by means of an applicator well wrapped with cotton. No one method has been used to the exclusion of the others, and often all

of them have been employed with the same patient. Menthol can be dissolved in the *oleum petrolina* up to a strength of 50 per cent. Those above 25 per cent. have been used by inhalation, those below by direct application. If the solution is too strong it will cause great pain and patients will refuse to have it applied. This is so especially in the nose, and I cannot agree with some writers who report using it there as high as 20 per cent. Without cocaine I have never been able to apply to the nasal mucous membrane more than a 1 or 2 per cent. solution, excepting in atrophic conditions, which will be considered by themselves. In the pharynx, the mouth and the larynx much stronger solutions can be used.

When applied in the proper percentage menthol produces a pleasant, cool sensation. It is analgesic to some degree and second applications can be made in increased strength without causing discomfort. It is interesting to notice that when used in full strength on the first application patients differ as to the character of the resulting sensation. Some will describe it as a feeling of intense cold and others as a feeling of great heat. This is another illustration of the fact that extreme degrees of heat and cold cannot be easily distinguished.

Let us now inquire into the results obtained from the use of menthol, and first in the diseases of the nose. In the acute diseases of the nose it does not appear to be of much benefit.

It has been used in the ordinary acute rhinitis and in its various forms, such as the membranous and those occurring in patients with the syphilitic and rheumatic constitutions. The feeling of coolness was grateful many times to the patients, but the drug did not seem to have any controlling influence over these conditions. In rare instances where a simple chronic rhinitis, without hypertrophy or deformity, was seen, treatment with menthol yielded better results. I have seen three such cases where supplementing the ordinary treatment with a weak solution of menthol assisted materially in restoring the patients to health. This statement can be made with some degree of certainty because they had been treated in the ordinary way for some time without progress. After operations upon the nasal passages, especially in those cases where a mild antiseptic is necessary, menthol has rendered good service. The soothing properties of the oil combined with the germicidal qualities of the drug have kept the wounds free from sepsis and thus hastened repair. So far as known it has never produced any toxic symptoms, and can therefore be used freely. Following operations, after the nasal passages have been thoroughly cleaned, the parts have been covered with as strong a solution as can be borne by means of the spray, and the excess then blown away. I think to this practice can be attributed the freedom of the cases which form the basis of this report, from the mild sepsis sometimes seen after operations within the nose. These cases have been singularly free from any symptom of sepsis; and as the method of operation only differs in the use of this drug from that followed by more skilful operators who report some cases where a mild sepsis was observed to follow surgical interference with the nasal passages, it seems that menthol should be credited with this pleasing result.

In the treatment of atrophic rhinitis menthol has a place. It cannot supplant other measures, but can supplement and assist in the relief of this most discouraging affection. It has been tried in the following manner: After cleansing the parts a solution that can just be felt has been thoroughly applied. It is remarkable often how strong a percentage will be borne. I have used it in this disease as high as 35 per cent. without the patient complaining. After a few days, however, the parts will become more sensitive and a weaker solution must be applied. With this returning sensitiveness a corresponding benefit takes place in the patient. The dryness, odor, and the accumulation of hardened mucus masses are partially relieved. Beginning with the strength just mentioned, a gradual decrease has been found necessary until, at the end of several weeks, but a 5 per cent. solution would be tolerated. The condition of the patients has improved step by step with the decrease in the toleration of the drug. Whether this improvement will be permanent or not it is difficult to say, as the cases have been too recent, but the results already observed seem to warrant a thorough study of the action of menthol in this disease. Besides the office applications it was found convenient to fit out patients with an atomizer containing the proper solution, with instructions to spray it into the nose from one to three times daily. This plan will lessen the frequency of the office visits, keep the nasal passages free from odor, and prevent the clinging of masses of inspissated mucus to their walls. All this adds to the comfort of the patients and does not interfere in the least with the employment of other means for the relief of the disease.

In the pharynx and mouth the results with menthol have been very satisfactory, and perhaps more positive than in other parts of the upper air tract. It has been used in acute and chronic inflammations of these organs, especially in the latter, with some success. If the ordinary sore throat is taken in its early stages and the parts brushed with a strong solution, frequently repeated, the attack may often be limited both in intensity and duration. This has been seen repeatedly in patients subject to sore throat. They will appear as soon as an attack begins and ask that their throats be treated in the same way as before. I believe these to be cases where the cause is local rather than constitutional. In those depending

on some systemic condition this treatment does not as often succeed.

Many cases of chronic inflammation in these organs with most diverse etiology have been treated with menthol. In some of these cases the relief has been marked and permanent, in others partial and temporary. After careful consideration of the results the following general rule can be formulated: When a chronic inflammation follows an acute attack, with the organs above and below the pharynx free from serious disease, the relief from this treatment has been permanent; associated with chronic nasal or laryngeal disease the relief has been partial and temporary. This conclusion is in keeping with the known relations of the pathological processes of the upper air-passages and the action of drugs upon them. However, it must be borne in mind that a certain class of cases are relieved by this remedy, and that therefore it is a valuable addition to the list of our therapeutic agents.

Menthol has not been used in acute inflammation of the larynx, but in subacute and chronic inflammation of that organ it has been tried extensively. The results do not differ in any marked degree from those following its use in the pharynx, and the rule just given is referred to as expressing the conclusions of my observations concerning its action here. The applications to the larynx have been by means of the spray, as it was found that this method was more pleasant to the patients and gave as good satisfaction as when applied directly.

Before concluding this report a few words should be said of the action of menthol on the tubercular lesions. My experience has not been large in these cases, and therefore it is with some hesitation that they are referred to at all; still I have seen a few cases, and the importance of the subject justifies the record of the results even if the number of observations is not large.

Menthol has been used in five cases of laryngeal phthisis, all of them consecutive upon disease of the lungs. Two were very far advanced, and only lived two and four months respectively from the date of the first observation. Even in these desperate cases the effect of menthol was marked, and they, perhaps, will best illustrate its local action, as but little improvement took place from any general treatment. The drug was used both by inhalation and by the spray, the strength of the former being 30 per cent. and that of the latter 10 to 20 per cent. The inhalations were given frequently for a few minutes at a time; the spray was used from three times a day to once every other day according to circumstances.

My limited experience confirms the observations of Rosenberg, Hyndman, and Beehag.

The hypersecretion is diminished and the larynx becomes cleaner. The ulcers also show the good effect and heal after a time, leaving smooth cicatrices. The infiltrations and hypertrophies are slower in responding, and it is sometimes necessary to apply lactic acid or touch them with the galvano-cautery point, or even to use the curette before they will yield. Following up these methods with the menthol treatment seems to hasten the repair as in the case of the ulcers. As the local condition improves dysphagia is lessened and nutrition promoted. The satisfactory results attending the application of this drug to tubercular lesions can be accounted for not only by its analgesic action and by its power to control superficial inflammations, but also by its influence on the bacillus tuberculosis. The investigations of Koch, Sormain and Bagnatelli show that menthol is highly destructive of this bacillus, and to this fact is due, no doubt, the benefit resulting from its use.

In conclusion we may say that while menthol seems to be a drug with a future of great usefulness, it needs to be carefully studied and investigated, so that we may become familiar with its action and know its limitations.

273 Franklin St.

Dr. Jonathan Wright, of Brooklyn, spoke of Heryng's method of curetting laryngeal ulcers and applications of lactic acid. He had seen very good results from the combined use of curetting and lactic acid, more particularly in causing subsidence of subjective symptoms, but he has also seen healing of the ulcers under its use. If we only gain relief from the subjective symptoms we have done a great service to humanity, as there is no disease more appalling in the sufferings it inflicts on its victims.

THE CLINIC.

THE TREATMENT OF LOCOMOTOR ATAXIA BY SUSPENSION, ETC.

A Clinical Lecture Delivered at the City Hospital, St. Louis, Mo., December 21, 1889.

BY ALEXANDER B. SHAW, M.D.,

PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM BEAUMONT MEDICAL COLLEGE.

[Reported for THE JOURNAL.]

Now, gentlemen, we come to the consideration of the treatment of tabes dorsalis, posterior spinal sclerosis, or locomotor ataxia, as you may be pleased to term it. For this man, who is suffering from that advanced form of the disease known as "Charcot's disease," of course we can do nothing but make the remainder of his days as comfortable as possible; but if the patient be seen during the early stages of the disease, when the lancinating pains are the most prominent symptoms, great benefit will frequently follow the administration of the

fluid extract of ergot in doses of from 30 to 60 minims three times a day, and the use of heavy static sparks to the whole of the spine, particularly over the region of the lumbar enlargement of the cord, every second or third day. The bromides of sodium and potassium in from 40 to 60 grain doses, repeated two or three times a day, have sometimes seemed to be of service, but I place more reliance on the ergot than the bromides. When the paroxysms of pain are very severe, you should unhesitatingly resort to the hypodermic use of morphine.

A few moments ago you heard me say, when speaking of the etiology of this disease, that I was not one of those that believed that the fact that a history of syphilis, so frequently discoverable in the history of those suffering from locomotor ataxia, is to be received as an evidence that syphilis is as frequently, as some authorities claim, the cause of posterior spinal sclerosis. Nevertheless, if a history of syphilis is given I invariably place the patient on what used to be known as the mixed treatment; that is, the simultaneous administration of the bichloride of mercury and the iodide of potassium, thus giving the patient the benefit of the doubt.

In addition to the treatment just outlined I have, since last May, been practicing the suspension treatment, first recommended by Mitchell and Rochochowsky, as modified by myself, for the relief of the pains of locomotor ataxia, with the most pronounced success. Not only, however, is the suspension of patients a means of alleviating their suffering so far as pain is concerned, but it has been productive of much good in other directions. By it the vesicle troubles are modified, the gait, appetite, digestion and general nutrition are improved, and sometimes the sexual desire is stimulated and firm erections secured. I am satisfied, gentlemen, that the treatment by suspension promises very much in locomotor ataxia, and that it should, if possible, be resorted to in almost all cases of this disease and in many other affections. I am now treating a case of what might be called traumatic ataxia by suspension with marked success. The patient developed ataxia after an injury to the head and spine.

I have here the report of a case of alcoholic or pseudo-tabes treated at the female hospital of this city, quite recently, by the suspension treatment entirely. This report was made to me by the resident physician and superintendent of that institution, Dr. W. B. Dorsett, for publication, but as it has never appeared in print I shall read it to you before giving you the technique of the suspension procedure in suspending these patients.

Louisa C., age 36, French, married at 15, prostitute for last four years, drinking considerable beer, wine and whisky all of this time; mother died of consumption; no family history of insanity, epilepsy or rheumatism; always enjoyed excellent health, excepting an attack of erysipelas last winter; has had three children, two of whom are dead; never miscarried; no history of venereal trouble. February 1, 1889, had a chill, shortly became jaundiced, and had intense pain of a shooting character in legs, which soon became stiff, and in a short time so weak that she could not stand. On admission to female hospital, April 25, 1889, she was utterly helpless, not even able to hold a lead pencil nor raise her hands to her face; could not turn herself over in bed, could not lift either limb, and would instantly fall over if placed in a sitting posture; pricking the arms or legs with a pin was not felt for twelve seconds, when there was a double sensation. Patient was put on iodide of potassium, but there was no improvement. The above condition continued until June 21st, when I suggested a trial of the suspension treatment with this suspension apparatus. Dr. Dorsett, superintendent and resident chief physician at the hospital, consented, and we at once made 50 lbs. traction on the neck at intervals of ten seconds for one-half minute. For the foregoing facts I am indebted to Dr. Dorsett, and I now quote from his report of the case to me:



Fig. 1. As used for suspension.

"Four or five days after the first suspension she complained of less pain in limbs, and claimed that she felt better every way.

"July 3d she was again suspended, 96 lbs. traction being made every ten seconds for one minute, no bad symptoms following; on the contrary she claimed she felt better. A few days later she was able to write her name legibly, something which was impossible a few days before, and had been since April last. The suspensions were continued every three or four days, with gradually increasing duration and traction on neck until July 25th; the length of the former was two minutes and the amount of the latter was 112 lbs.; patient weighs 150 lbs. On July 25th she began to menstruate for the first time in eight months.

"July 29th—Menstruation ceased; feels well, is improving rapidly; can bear entire weight on right, and more than half her weight on left leg. Suspended to-day with 20 lbs. fastened to her feet; traction on neck, 100 lbs. every ten seconds; duration, 190 seconds in two séances.

"August 5th—Patient sits up much of the time. Sensation is almost normal, combs her hair, feeds herself, cuts her own bread and meat, has a fair grip, moves her feet quite well, and I have strong hopes of seeing her walking in a short time.

"Suspended again August 5th, 180 seconds, two séances, 25 lbs. to feet, 100 lbs. traction.

"August 12th.—Suspended; 190 seconds, two séances, 33 lbs. to feet, 100 lbs. traction on neck.

"Improving rapidly in every way. Took three steps (short ones), steadying herself by holding to the back of a chair.

W. B. Dorsett, M.D.

August 12, 1889."

While I have seen recovery from alcoholic tabes occur after other modes of treatment, I am perfectly satisfied that the extremely rapid and continuous improvement in the foregoing case is almost, if not entirely, without parallel, and I attribute it, I think correctly, to the suspension accurately performed.

The technique of the operation of suspension as practiced by me is as follows:

Placing the patient directly under the apparatus, adjust axillary supports and halter, padding the latter at the back of the neck with a piece of thick felt. Now elevate the patient by traction on the cord playing on the upper set of pulleys; then lift such amount of patient's weight as may be desired from the axillary supports by pulling on the cord playing on the pulleys to which the spring balance is attached. Usually first suspensions do not exceed thirty seconds. If well borne, their duration is increased from one-half to one minute at each successive suspension, until the patient is permitted to hang from four to eight minutes.

Suspensions are performed every second or third day. During the first suspension I seldom lift more than 40 lbs. of the weight by the head, but usually increase about 20 lbs. at each succeeding suspension, unless the patient complains of too much pain in the jaws or neck, until the entire weight of the patient is supported by the halter. Every ten seconds, while the patient is suspended, I gradually, yet quite rapidly, elevate, then lower the cross-bar supporting the halter in which the head is swung by pulling on the cord playing over the pulleys to which the spring balance is attached, so that the desired amount of stretching will be made, thus increasing the traction to the desired maximum, and diminishing the amount of tractile force from 20 to 30 lbs. every ten seconds. The amount of force exerted will be indicated by the spring balance. I have in some cases, where suspension was remarkably well borne, allowed patients to remain hanging steadily at the maximum tension as long as three and four minutes. In four cases extra weights have been attached to the feet, while the whole weight of the body was being sustained by the neck. In one 16 lbs., in another 28, in the third 33, and in the fourth 40 lbs., were thus added.

The halter must be so tightly adjusted that the chin will not slip through it, and yet loose enough to allow it to rest well upon the occiput. If too tightly buckled, the maxillary articulation will be strained and considerable pain produced in its vicinity. Never make the ropes fast to anything; either have an assistant to hold the ropes by which the patient is elevated, or make a noose in it about 2½ feet from the floor, in which place your own foot, and thus be ready at any moment to lower your patient. Where patients will do so I frequently substitute elevation of the arms while suspended, thus throwing extra weight on the halter, watching the spring balance the while to note the number of pounds sustained by the neck, for rythmical traction on the rope playing on the lower set of pulleys; but in many cases patients refuse to practice this procedure because of the pain it produces in the arms as they roll over the axillary supports.

St. Louis, December 21, 1889.

Treatment of Ophthalmia Neonatorum.—The prophylaxis of ophthalmia neonatorum, according to Buscarlet, consists in irrigation of the mother's vagina during labor with 1–2000 solution of sublimate. Immediately after the birth of the child a collyrium of 1 part of nitrate of silver to 150 parts of water should be used. If purulent ophthalmia appears in spite of these precautions the following treatment should be employed: in mild cases, every hour during the day and every two or three hours at night irrigation of the eyes should be made with the following solution:

Distilled water.	1,000 grams.
Alcohol.	10 "
B. naphthol.	0.40 centigr.

This treatment should be followed by the application to the eyelids of a cotton compress moistened with the naphthol solution and held in place by a flannel bandage.

In severe cases with considerable purulent secretion irrigations must be used as often as possible, and a nitrate of silver solution in the strength of 1–30 should be used every twelve hours, care being taken to neutralize at once the excess of the solution with salt water. When improvement takes place the solution may be weakened to 1–100. The mother must take pains that she be not herself infected; she must keep the child's eyes bandaged during nursing and afterwards bathe the mammary region with a solution of alcohol or naphthol; if fissures are present the breasts must be covered with antiseptic compresses.—*Jour. de Méd. de Paris.*

Death from Chloroform due to Respiratory Failure.—A telegram to *The Lancet* from Dr. Lauder Brunton, now in India, states that, after experiments on 490 animals, he has reached the conclusion that the danger of chloroform is asphyxia, not heart failure—a direct reversal of Dr. Brunton's former views.

TABLES, AND DIAGRAMS REPRESENTING THE SAME,

ACCOMPANYING A PAPER ENTITLED

THE CLIMATIC CAUSATION OF CONSUMPTION.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HENRY B. BAKER, M.D.,
OF LANSING, MICH.

(*Concluded from pages 85 and 129.*)

TEMPERATURE, AND DEATHS FROM PHTHISIS IN LONDON, ENGLAND.

TABLE 10.—Exhibiting, by months, for a period of thirty years, 1845–1874, the relation of average deaths per week in London, England, from Phthisis, to the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 10.

Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. deaths per week from phthisis . . .	154	153.25	160.2	162	157.25	150	144.75	136.50	132.4	135.75	146	147
Av. temperature, degrees Fahr	38.6	40.1	40.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.2	40.5

TEMPERATURE, AND SICKNESS FROM CONSUMPTION IN MICHIGAN.

TABLE 11.—Exhibiting, by months, for a period of nine years, 1878–1886, the relation between sickness in Michigan from consumption, and the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 11.

Nine Years, 1878–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness . .	65	68	69	70	67	65	63	61	62	64	64	63
Av. temperature, degrees Fahr	20.72	22.68	30.23	44.06	55.84	64.83	70.27	67.88	61.43	35.87	35.87	25.47

TEMPERATURE, AND DEATHS FROM BRONCHITIS IN LONDON.

TABLE 12.—Exhibiting, by months, for a period of thirty years, 1845–1874, the relation of average deaths per week in London, England, from bronchitis, to the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 12.

Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. deaths per week from bronchitis . .	193.5	172.5	165	127.5	90.0	63.2	48.25	41.0	48.2	76.5	141.25	190.2
Av. temperature, degrees Fahr	38.6	40.1	42.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.22	40.5

TEMPERATURE, AND SICKNESS FROM CROUP IN MICHIGAN.

TABLE 13.—Exhibiting, by months, for a period of ten years, 1877–1886, the relation between sickness in Michigan from membranous croup and the average atmospheric temperature for the same period of time. This table is graphically represeuted in Diagram 13.

Ten Years, 1877–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness . .	2	10	8	7	5	4	2	3	4	6	9	10
Av. temperature, degrees Fahr	20.56	23.62	29.80	44.33	56.08	65.10	70.52	68.14	61.67	50.83	36.04	26.60

TEMPERATURE, AND SICKNESS FROM "RESPIRATORY DISEASES" IN INDIA.

TABLE 14.—Exhibiting, by months, for a period of three years, 1883–1885, the relation of sickness from "respiratory diseases" among the native troops in India to the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 14.

Three Years, 1883–1885.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. cases of sickness per 1,000 soldiers .	102.8	71.6	51.8	38.6	33.8	26.6	25.5	23.7	31.8	37.7	59.9	93.8
Av. temperature, degrees Fahr	68.7	70.6	79.1	83.9	85.2	84.8	83.3	82.7	82.3	80.5	74.2	69.1

TEMPERATURE, AND SICKNESS FROM INFLUENZA IN MICHIGAN.

TABLE 15.—Exhibiting, by months, for the ten years, 1877–1886, the average percentage of reports stating the presence of sickness from influenza in Michigan, also the average atmospheric temperature at stations in Michigan for the same period of time. This table is graphically represented in Diagram 15.

Ten Years, 1877–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness . .	55	61	59	52	38	28	20	21	29	33	41	48
Av. temperature, degrees Fahr	20.56	23.62	29.80	44.33	56.08	65.10	70.52	68.14	61.67	50.83	36.04	26.60

TEMPERATURE, AND SICKNESS FROM TONSILITIS IN MICHIGAN.

TABLE 16.—Exhibiting, by months, for the eight years, 1879–1886, the average percentage of reports stating the presence of sickness from tonsilitis in Michigan, also the average atmospheric temperature at stations in Michigan for the same period of time. This table is graphically represented in Diagram 16.

Eight Years, 1879–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness	60	61	60	53	47	42	33	32	37	45	55	60
Av. temperature, degrees Fahr	19.91	21.77	28.82	43.04	55.98	64.79	69.78	66.25	61.11	50.68	35.96	25.82

TEMPERATURE, AND SICKNESS FROM BRONCHITIS IN MICHIGAN.

TABLE 17.—Exhibiting, by months, for the nine years, 1877–1885, the average percentage of reports stating the presence of sickness from bronchitis in Michigan, also the average atmospheric temperature at stations in Michigan for the same period of time. This table is graphically represented in Diagram 17.

Nine Years, 1877–1885.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness.	77	78	77	72	61	54	43	41	49	55	67	72
Av. temperature, degrees Fahr	20.77	23.89	29.76	44.14	56.23	65.30	70.73	68.23	61.73	50.72	36.23	27.28

TEMPERATURE, AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

TABLE 18.—Exhibiting, by months, for the eight years, 1877–1884, the average percentage of reports stating the presence of sickness from pneumonia in Michigan, also the average atmospheric temperature at stations in Michigan for the same period of time. This table is graphically represented in Diagram 18.

Eight Years, 1877–1884.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov	Dec.
Av. percentage of reports of sickness.	62	66	62	56	42	27	17	14	18	23	36	48
Av. temperature, degrees Fahr	21.43	25.60	31.04	44.48	56.60	65.54	70.68	68.85	62.05	51.34	38.99	27.25

ABSOLUTE ATMOSPHERIC HUMIDITY, AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

TABLE 19.—Exhibiting, by months, for a period of ten years, 1877–1886, the relation of sickness in Michigan from pneumonia to the average absolute humidity. The two lines in this table are graphically represented in Diagram 19.

Ten Years, 1877–1886.	Annual Av.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sickness from pneumonia	36.5	57.9	63.1	61.1	53.9	39.3	25.1	16.1	13.3	16.7	21.3	33.4	44.8
Average absolute humidity	3.44	1.38	1.51	1.81	2.75	3.91	5.27	6.07	5.84	4.98	3.71	2.30	1.73

TEMPERATURE, AND DEATHS FROM PNEUMONIA IN LONDON, ENGLAND.

TABLE 20.—Exhibiting, by months, for the thirty years, 1845–1874, the average number of deaths from pneumonia in London, England, also the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 20.

Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. deaths per week from pneumonia	98	86	91	82	67	53	42	37	43	66	98	108
Av. temperature, degrees Fahr	38.6	40.1	42.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.2	40.5

TEMPERATURE, AND SICKNESS FROM SCARLET FEVER IN MICHIGAN.

TABLE 21.—Exhibiting, by months, for a period of ten years, 1877–1886, the relation which the sickness in Michigan from scarlet fever sustained to the atmospheric temperature. Exhibiting the average atmospheric temperature, and what percentage of all weekly reports received stated that scarlet fever was under observation of the physicians who made the reports. (Over 41,000 weekly reports of sickness, and over 190,000 observations of the atmospheric temperature are represented in this table). This table is graphically represented in Diagram 21.

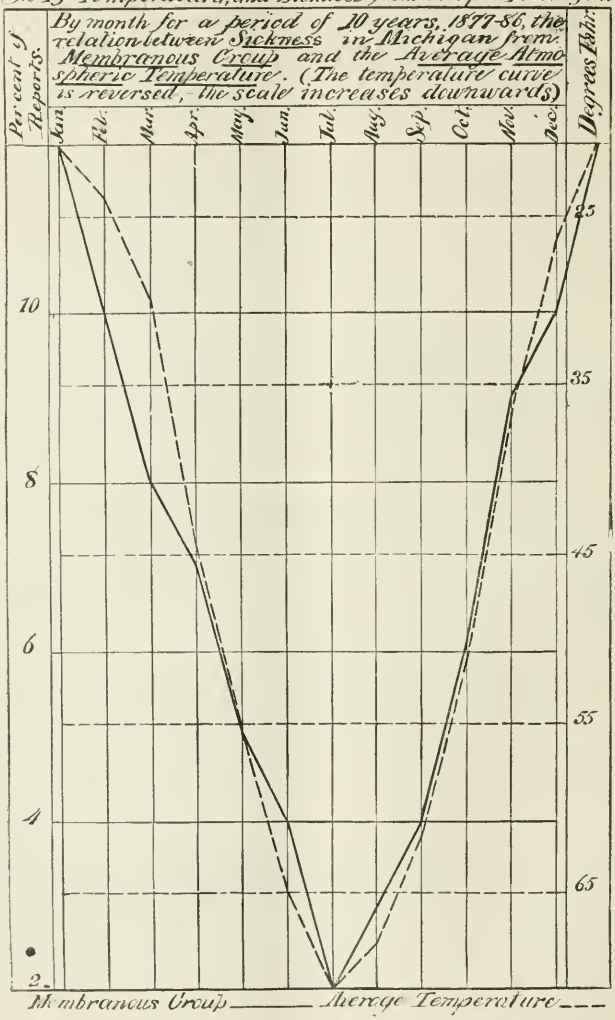
Ten Years, 1877–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports	22.3	23.5	23.9	21.6	19.6	17.0	13.7	11.8	12.5	16.0	17.3	18.1
Av. temperature, degrees Fahr	20.56	23.62	29.80	44.33	56.08	65.10	70.52	68.14	61.67	50.85	36.04	26.60

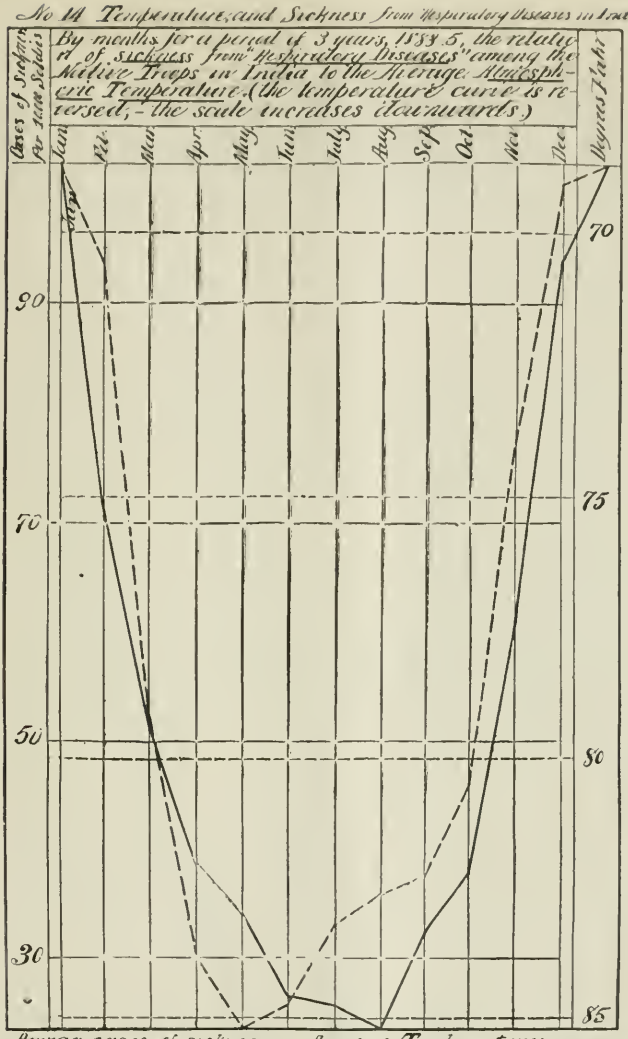
TEMPERATURE, AND DEATHS FROM SMALL-POX IN LONDON, ENGLAND.

TABLE 22.—Exhibiting, by months, for thirty years, 1845–1874, the relation between the weekly average number of deaths from small-pox and the average atmospheric temperature in London, England. Records of 30,000 deaths are included in this table. This table is graphically represented in Diagram 22.

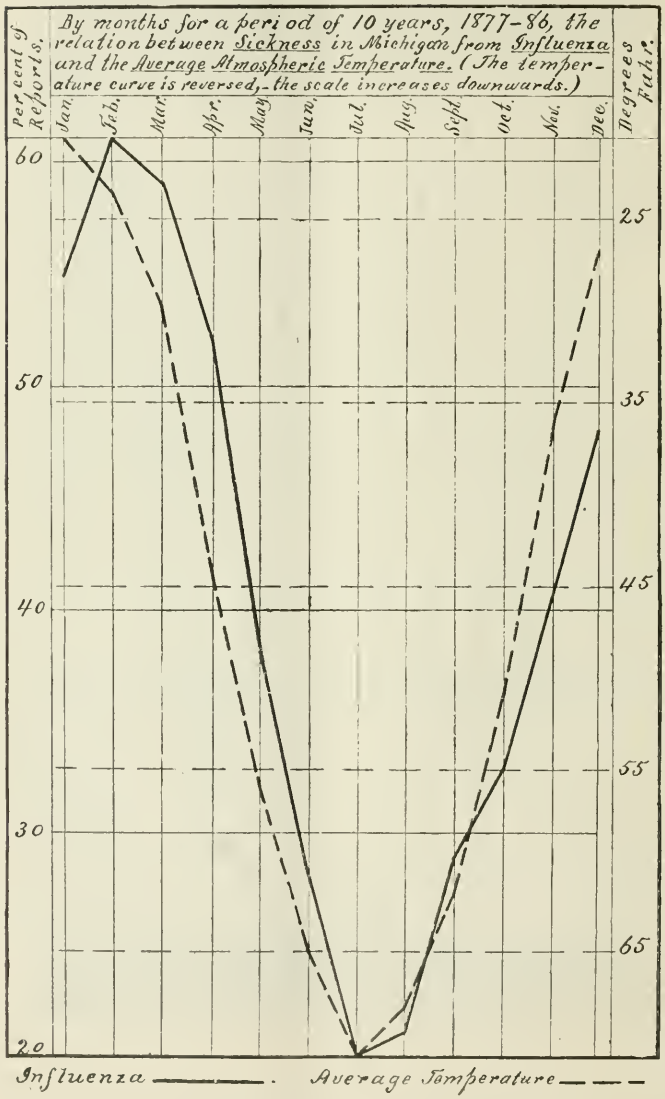
Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. weekly number of deaths	23.00	24.00	21.60	23.75	24.50	22.40	18.00	14.25	13.00	13.00	14.50	18.20
Av. temperature, degrees Fahr	38.6	40.1	42.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.2	40.5

Fig 13 Temperature, and Sickness from Croup in Michigan

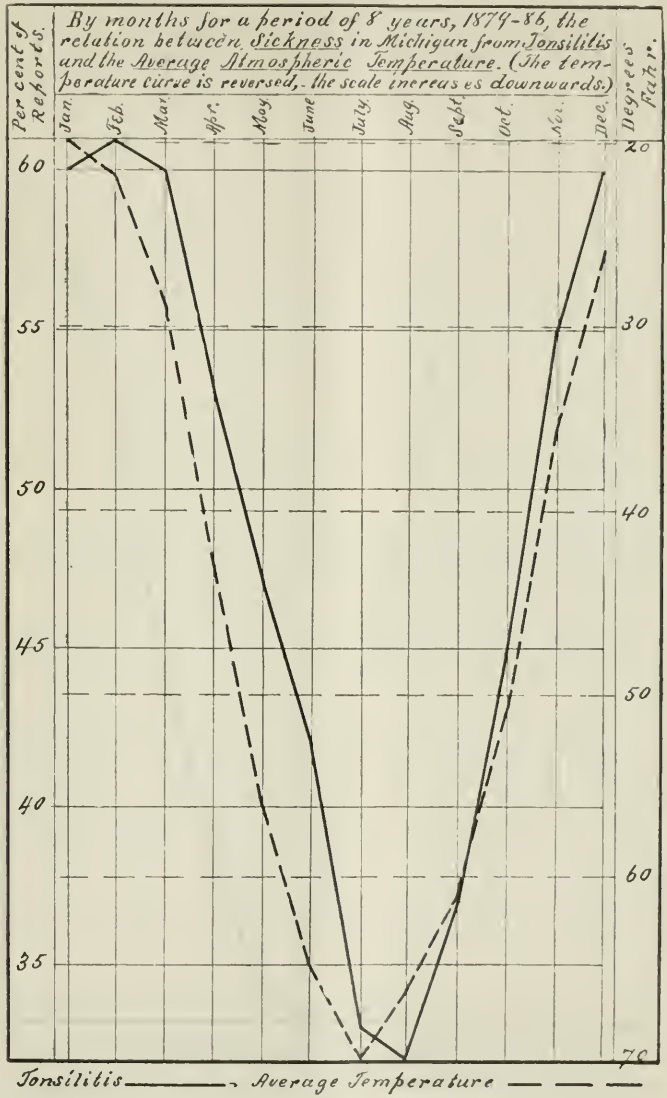



No 14 Temperature and Sickness from Respiratory Diseases in India
By months for a period of 3 years, 1883-5, the relative of sickness from "Respiratory Diseases" among the Native Troops in India to the Average Atmospheric Temperature. (The temperature curve is reversed, - the scale increases downwards)
Cases of Sickness for 1000 Soldiers
Degrees Fahr
Jan
Feb
Mar
Apr
May
June
July
Aug
Sept
Oct
Nov
Dec
90
70
50
30
70
75
80
85
Average cases of sickness ____ Average Temperature ------
Prepared from data found in 20th 21st and 22nd Annual Reports of the Sanitary Commissioner with the Government of India.

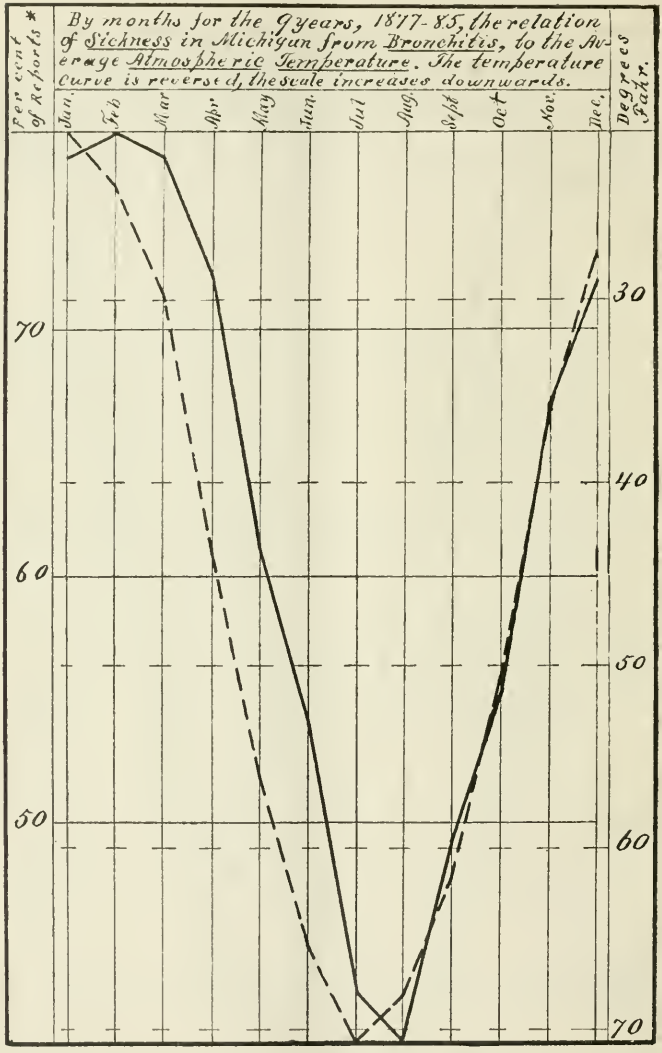
NO. 15.—TEMPERATURE AND SICKNESS FROM INFLUENZA IN MICHIGAN.



NO. 16.—TEMPERATURE AND SICKNESS FROM TONSILITIS IN MICHIGAN.



NO. 17.—TEMPERATURE AND SICKNESS FROM BRONCHITIS IN MICHIGAN.

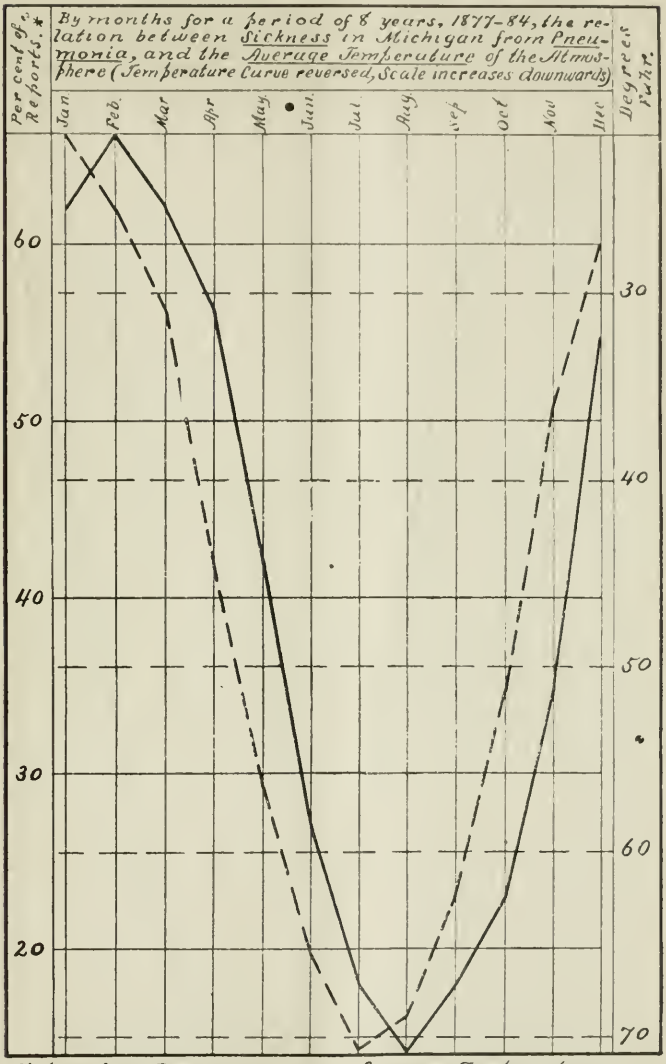


Bronchitis ———. Average Temperature — — —.

* Indicating what per cent of all reports received, stated the presence of Bronchitis then under the observation of the physicians reporting.

Over 35,000 weekly reports of sickness, and about 173,000 observations of the atmospheric temperature are represented in this diagram.

NO. 18.—TEMPERATURE AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

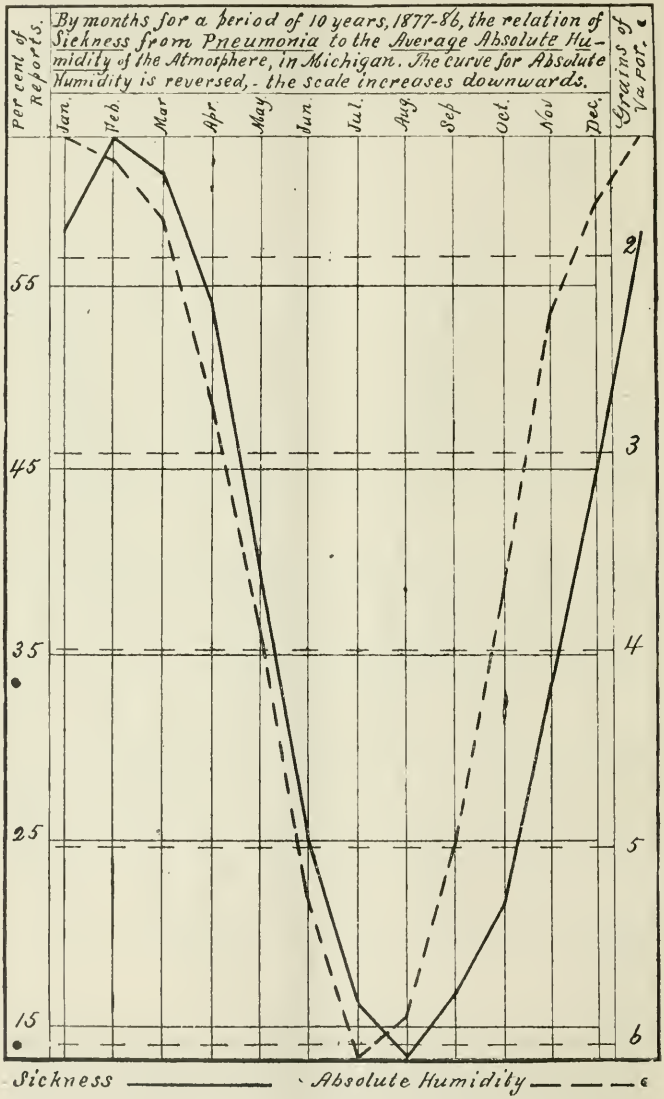


Sickness from Pneumonia _____. Average Temperature — —.

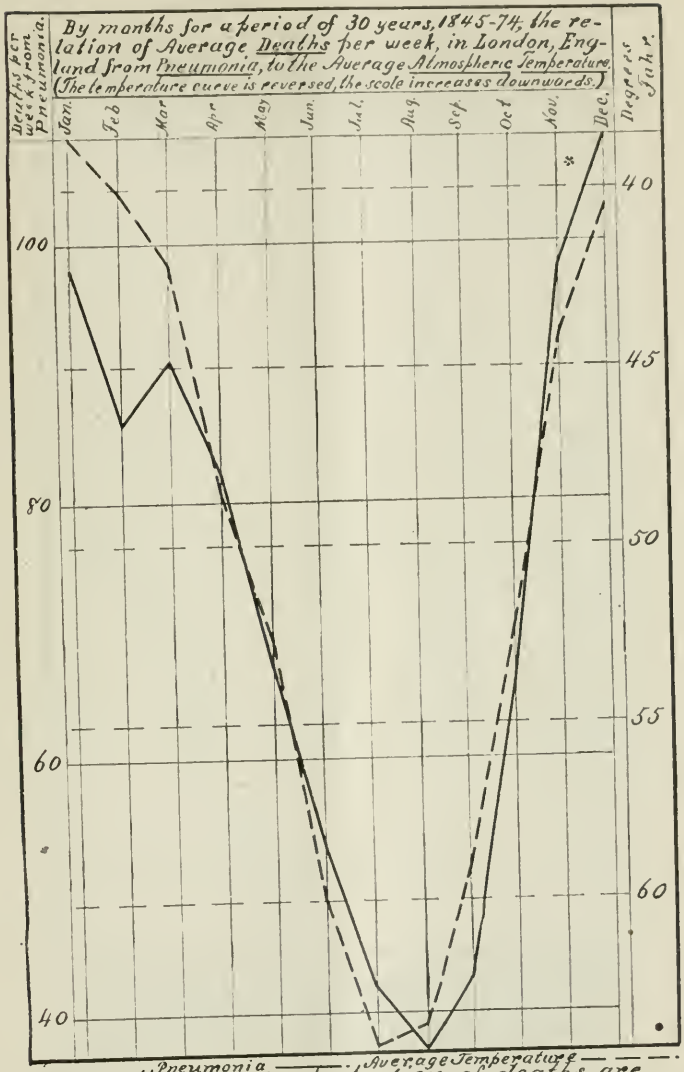
*Indicating what per cent of all reports received, stated the presence of pneumonia then under the observation of the physicians reporting.

• Over 30,000 weekly reports of sickness, and over 150,000 • observations of the atmospheric temperature are represented in this diagram.

NO. 19.—ABSOLUTE HUMIDITY, AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

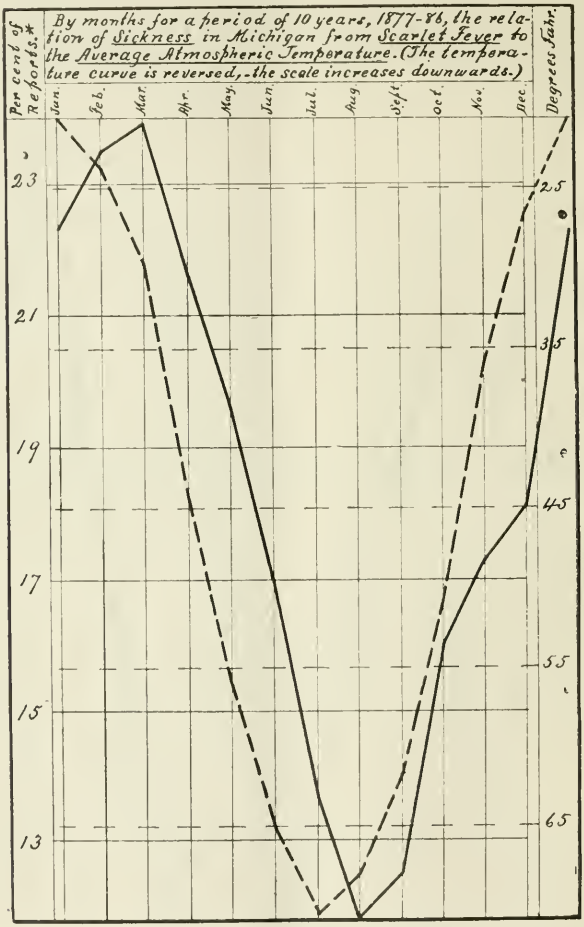


NO. 20.—TEMPERATURE AND DEATHS FROM PNEUMONIA IN LONDON.



* Perhaps a greater proportion of deaths are returned for the later than for the earlier months in each year?

NO. 21.—TEMPERATURE AND SICKNESS FROM SCARLATINA IN MICHIGAN.



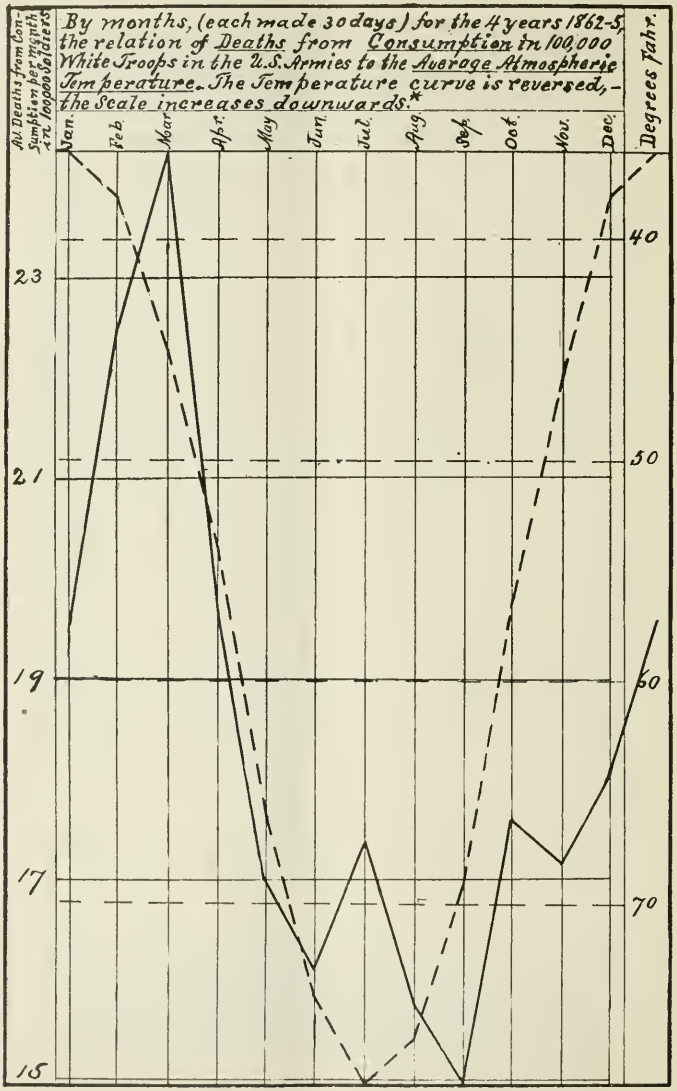
Scarlet Fever _____. Average Temperature — — — —.
*Which stated that Scarlet Fever was under the observation of the physicians who made reports.
Over forty-one thousand weekly reports of sickness and over 190,000 observations of the atmospheric Temperature are represented in this diagram.

NO. 22.—TEMPERATURE AND DEATHS FROM SMALL-POX IN LONDON.



Small-pox ———. Average Temperature — — —.
Except in a few months the Small-pox follows two months later than the temperature changes.
The line representing Small-pox should follow as long a time later than a line representing its controlling condition as is the average duration of the fatal cases plus the period of incubation?

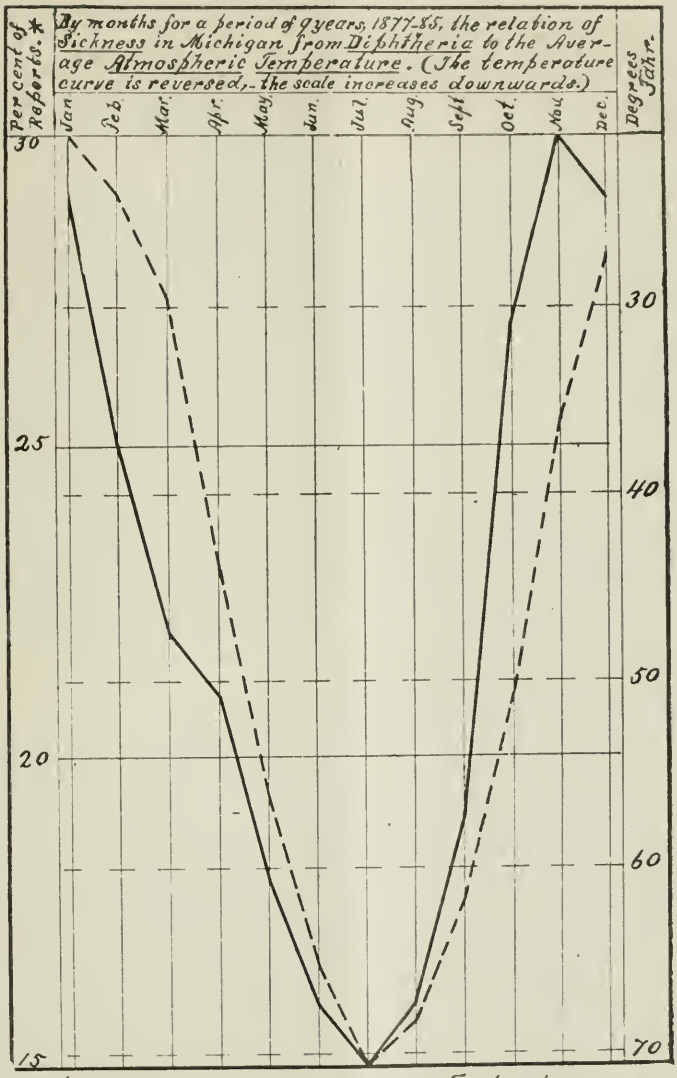
Diagram 23.—Deaths from Consumption in U.S. Armies, and Temperature.



Deaths ———. Average Temperature — — —.

*The temperature curve is made from the normals at six Stations representing approximately the localities occupied by the armies of the United States in the war of the rebellion.

Diagram 24.—Sickness from Diphtheria, and Temperature in Michigan.



Diphtheria ———. Average Temperature — — —.
*Which stated that diphtheria was under the observation of the physicians who made reports.

MEDICAL PROGRESS.

ANTIPYRIN AND THALLIN AS HÆMOSTATICS.—DR. MONCORVO summarizes his views regarding the hæmostatic action of antipyrin and thallin as follows :

1. Antipyrin and thallin should be considered as hæmostatics whose efficacy surpasses that of their cogeners in so far as relates to their direct action upon the hæmorrhagic focus.

2. This hæmostatic property has been proved by experimentation upon animals and by clinical experience.

3. Acetanelid and phenacetin do not appear to possess much hæmostatic power.

4. The hæmostasis produced by antipyrin and thallin seems to be explained by the constriction which they produce in the vessels as well as by the coagulation of the blood which is hastened by their action.

5. This interpretation, however, is at present only a hypothesis which needs additional support from experimentation.—*Jour. de Méd. de Paris.*

INFLUENCE OF MENSTRUATION UPON LACTATION.—SCHLICHTER, of Vienna, has made a study of the alterations which take place in the milk of nurses under the influence of menstruation and the development of children during such menstruation. He finds that the milk of nurses who do not menstruate contains four times as much fat in the evening as in the morning, notwithstanding which the nurselings continue to thrive. The milk of menstruating women presents no appreciable alterations ; caseine is found in the same proportions as in non-menstruating women ; the same is true of fat, and the sugar, which has been considered as the cause of diarrhœa, is not increased. The differences between the milk of menstruating women and that of non-menstruating women are less than those which exist in non-menstruating women between the composition of the morning and the evening milk. Schlichter affirms that when menstruation appears in a nurse more than six weeks after confinement, it has no influence upon the milk or upon the child. If it appears before the sixth week it may, like any other hemorrhage, exert a slight influence upon the milk secretion. The dyspepsias and diarrhœas, then, which occur in children nursed by menstruating women should be regarded as accidental and as not requiring a change of nurse.

In this connection Exner remarks that mammals suckle their young without inconvenience during rut and even up to the end of gestation. Eisenschitz and Teleky oppose Schlichter's observations and analysis with the general experience of the profession to the effect that the milk under the influence of menstruation undergoes qualitative and quantitative alterations which exert a manifest effect upon the nurselings.—*La Sem. Méd.*, Vienna Cor.

CHLORAL IN ECLAMPSIA.—DR. E. BLANC finds the chloral treatment of eclampsia to be the most reliable, although considered by some as merely a symptomatic remedy. Blanc has satisfied himself that chloral exercises a favorable action upon the inflamed and obstructed parenchyma of the kidneys.

The intravenous and hypodermic administration of chloral have been abandoned as dangerous, and it remains to consider the relative merits of administration by the rectum and stomach. If the woman is in a comatose condition it is of course impossible for her to swallow, and accordingly the rectal method is generally preferred, the chloral being emulsified by means of milk and the yolk of eggs. Inasmuch as the enemata are usually expelled, Blanc prefers the method of Prof. Fochier, whereby an œsophageal tube is introduced into the stomach and the chloral injected. If it is impossible to open the mouth, the tube may be passed through the nasal fossæ. The chloral solution should be made in the strength oz 1-30 or 1-40. The dose should not exceed 3 or 4 grm. In this manner 10 or 12 grm. of chloral may be administered in twenty-four hours. As the remedy appears to have a pathogenic action, it is well to give 3 or 4 grm. per day in severe albuminuria of pregnancy. Its administration should be continued after the disappearance of the crisis for the purpose of eliminating toxic matters from the blood.—*Jour. de Méd. de Paris.*

ACUTE PANCREATITIS.—LANGERHANS reports to the Berlin Medical Society the case of a patient who presented some of the symptoms of typhoid fever and who died in coma. At the autopsy the pancreas was found to be completely mortified. This mortification he believed to be the result of an acute pancreatitis, an affection which habitually terminates in a few days. In the present case it lasted more than eight weeks. Characteristic symptoms of this affection are the sudden appearance of the disease in young and vigorous subjects, bilious vomiting, headache, vertigo, distention of the belly, etc. In the case reported there was no sugar in the urine.

At the same meeting Hausemann reported three autopsies of patients who died of this disease ; in none of them had sugar appeared in the urine. Ewald reported autopsies in two cases of total destruction of the pancreas by carcinoma, in neither of which did diabetes appear.—*La Sem. Méd.*

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SATURDAY, FEBRUARY 1, 1890.

THE PRESENT STATUS OF MEDICAL LEGISLATION IN THE UNITED STATES.

The old-time agitation of the question of medical education has not subsided into insignificance, because that of medical legislation has in recent years come more directly to the front. The two subjects have become intertwined, and have thus created renewed and continued public interest in each other. Judicious measures of legislation restrictive of medical practice assuredly suggest inquiry into the necessity and advisability of the possession of the highest qualification in the practitioner; while the medical schools are likely to vie with each other in the elevation of the requirements for education in their pupils, who in the near future may be compelled by legislative enactment to undergo a competitive examination before a perfectly disinterested State Board of Examiners, who will impartially decide as to their competency.

Apart from the important desideratum that the status of medical education should be as nearly uniform as possible throughout the country, and that medical legislation should share the same general character of similarity wherever local, geographical or other causes do not operate to prohibit it, it is well occasionally to glance at the actual condition of the various States of the Union as to existing laws enacted for the regulation of the practice of medicine and the annihilation of quackery. It is well to remember in this connection a fact that is too often forgotten, that these laws are intended for the protection of the public and are not prepared or supposed to be executed in the interest of the profession. With this spirit earnestly impressed upon the mind of the laity, opposition to these enactments would soon be dissipated, and a clear open course be left for the passage of laws protective of the community.

The year 1890 opened with a cheerful retrospective view of what has been creditably accomplished in this direction during the previous year, and a satisfactory indication from a number of States that the work hitherto effected will, at as early a date as possible, be amended or carried still further forward in the path of progress. At this moment restrictive legislation is in force in at least three-fourths of the States of this country. In some, as in Pennsylvania, this amounts to registration simply; in other States, Medical Examiners exert their judicial functions in plenary power, while in others again candidates for practice may be admitted, without direct personal examination, on the *ipse dixit* of a State Board of Health, as in South Carolina, although in this State, as in some others, personal and direct examinations are the rule and not the exception.

Geographical lines do not produce uniformity as to legislation; States adjacent in their boundaries and supposed to be influenced by similar commercial interests have entertained very different ideas as to the necessities of legislation for the protection of their various communities. Pennsylvania, New York and New Jersey are not so dissimilarly situated in this respect, that three such different laws should have been enacted for the suppression of quackery and professional ignorance. Still, in some States, such as Pennsylvania, it was absolutely essential, in order to accomplish anything at all, that the imperfect law now in force should be accepted as a stepping-stone to something better hereafter, when the tide of public sentiment shall have toned up to the exigencies and advanced spirit of the times, and the good that is in the law shall have exercised its convincing sway over the minds of even the veriest quibbler and opponent.

In a general way, it may be said that the action of the American Medical Association, at its last annual meeting, looking to uniformity of legislative enactments, will have a good effect in each State to awaken interest in the subject and to strengthen the hands of those who are earnestly struggling either to obtain a law or to amend and

improve what was already in force. So, too, the action of the New York Legislature in requiring of medical students a certain standard of preliminary education, may be regarded as an additional protection to the public, which had not been covered by the provisions of the law already in operation in that State.

Here and there official nearsightedness interferes with the passage of efficient State laws regulating practice, as in Maine, where the Governor first signed the bill and then erased his signature, and the Court decided, after quite a contest, that the erasure was legal—or in New Hampshire, where a decision was rendered by the Supreme Court, *in banc*, that it is not constitutional to demand of an intending practitioner a license as a prerequisite for such an occupation. Maine and New Hampshire are therefore, although first in the enumeration of the States, practically at the extreme end of the scale in the protection of the public by restrictive and retributive justice against empiricism and quackery.

We are thus reminded that Kentucky's enactment of 1874, amended in 1888, is entitled the "Empiricism Law," basing its name on its chief object, the suppression of illegal and strictly unrecognizable practice; this being accomplished by the requirement that medical college graduates shall alone be allowed to practice, except those physicians only who have had a certain number of years in practice, and by the usual stipulation as to the necessity of registration that exists in other States which have not risen from the lower plane of weak legislation to the higher sphere of a forcible and effective restrictive policy. Tennessee, its near neighbor, had nothing, in the way of a law, until last summer, and now, with its Board of Medical Examiners and its other provisions for an active contest with quackery, will soon, doubtless, succeed as Kentucky has already done, in driving irregulars and incompetents into other States. And this will doubtless be the stimulus that will eventually improve in this respect the moral tone of every community, the sense of self-protection against invasion when quacks and empirics are forced to seek shelter away from the *vis a tergo* that is perpetually urging them towards emigration.

North Carolina is happy in the possession of a Board of Medical Examiners, before whom regularly credited graduates of medical schools too often exhibit their incapacity as medical practitioners. Virginia is equally felicitous in its expressions of satisfaction with its Board, which on one occasion at least rejected 70 per cent. of the candidates for license to practice medicine that appeared before it. A good thing for the cause of education is the publication by this Board of the questions and answers, of course anonymously, through which the rejected candidates have freely ventilated their profound ignorance and unfitness for professional work.

Florida, too, has a new law, in which Medical Examiners for each Judicial District of the State are appointed, in addition to a general Board of Homœopathic Medical Examiners for the State at large; but singularly enough, the District Examiners must be graduates of some medical college recognized by the American Medical Association, which has nothing whatever to do with medical colleges, recognizing in its organization and membership medical societies only.

Minnesota, too, has a State Board, which impartially rejects incompetent candidates, and is itself already sensible of the beneficial effect it has had upon the community. An unusual proviso is made in the law of this State, requiring evidence that three courses of lectures, of at least six months each, have been taken by the applicant for the license to practice. While referring to unusual provisions in such laws, the case of Wisconsin may be cited, which, although practically without any restrictive law, allows only graduates in medicine, or those connected with organized medical societies, to testify in court or collect fees by law. Alabama seems particularly happy in the provisions of its law, one of the gentlemen most actively concerned in its execution regarding it as "ideally perfect." Certainly the whole State, well organized as a profession, through its numerous County Boards, seems aroused to a sense of the necessity of self-exertion for the enforcement of the law. And yet Arkansas, from the very fact that it has so many County Examining Boards is unhappy because these Boards, being appointed by the County Judges, are often thoroughly unfit to perform their duties, never having themselves received any education in a medical college.

Such are some of the features of interest in connection with the existence of County Boards as part of the machinery for the execution of the

law. It is not necessary to specify all the other conditions that are in effect in the other States of the Union. Most of these, as in Illinois and West Virginia, have been operative for so many years that their practical working has become familiar to almost all medical men who keep themselves informed as to the progress made by and through the profession for the good of the public and its permanent protection. Few States are likely to have so much power invested in their State Boards of Health by such confiding Legislatures, even though experience has shown them to be so absolutely worthy of the faith that has been reposed in them.

The present status of medical legislation may, on the whole, be regarded as satisfactory, indicating a healthier condition of public sentiment, a material decrease in the opposition to new enactments, and greater unanimity in professional efforts. The wedge has been driven almost too gently in some States, but it seems probable that it will penetrate still more deeply into the corrupt mass of empiricism and quackery with the awakened public impulse which must guide the views of the Legislatures. Whether uniformity of legislation ever becomes a fixed fact in all the States of the Union, or not, there seems a fair promise that the time is not far distant when every State will recognize the policy of self-protection, by the enactment and enforcement of laws decisive in their character and rigid in their execution.

A NEW DOCTRINE ABOUT DRUNKENNESS AND RESPONSIBILITY.

Another ancient dogma bids fair to become obsolete; we mean the doctrine asserting the responsibility of the drunken person for the criminal acts done in the condition of drunkenness. It was at least as early as the time of Chief Justice Coke that the legal dictum regarding the double guilt of the inebriate criminal was formulated, to the effect that inebriety always aggravates the offense, and that the penalty should be increased rather than diminished. This view has generally been entirely acceptable to the legal mind, until a recent date, since its tendency was eminently conservative of social and proprietary rights, and *pari passu*, entirely acceptable to the general public. But now-a-days there is a growing criticism of that theory, and eminent jurists in England and elsewhere have decided that a man may be convicted of an offense committed in drink, and yet be absolved from responsibility; in other words, the criticism has reference not so much to the expediency of the old doctrine,—that remains the same,—but the justice of the theory is challenged. For example, as reported in the *Lancet*, Baron Pollock has held that the plea of irresponsibility was tenable in a case where a homicide was committed by a person after taking a small quantity of alcoholic liquor—a quantity not sufficient ordinarily to disturb the reasoning faculties, but which, in the case in question, was sufficient to set in motion an insane predisposition that became the prime agent in the manslaughter. Another eminent judge in England has recently ruled, in regard to the case of a drunken mother, who through the neglect of her babe, occasioned its death by starvation the withholding of nourishment by the mother was not a crime for the reason that it was undesigned, and that it is not a declared crime to imbibe too much liquor.

Chief Baron Palles has ruled that neither law nor common sense can hold a man responsible for the acts done under the influence of an intoxicant, if by reason of long vigil, deprivation of sleep or impoverishment of the blood, he shall have become so reduced as to be made drunken with a smaller quantity of liquor than would have produced that effect upon him in good health. Justice Day has gone still further and has declared that a person, who does not know the nature and quality of the acts he commits, is not responsible for them, whatever may be the cause of his unconciousness.

The thought contained in these decisions is a complete reversal of the ground of decisions that have been respected for three hundred years by the general public, that have been on a thousand grave occasions accepted by the criminals themselves without a whisper of dissent and that have passed almost unquestioned by jurists until within the present decade. A recent judicial charge may be quoted to show the tenor that has prevailed in regard to the plea of irresponsibility: "No insanity or irresponsibility can be predicated in any given case, unless the mind showed a continuance of delirium or delusion, and that in no case should this be taken into account in mitigation of guilt, if it resulted from alcoholic intoxi-

cation." The ground of precedent as ordinarily assumed by the state's attorney, whose business it is to bring to punishment as many criminals as possible, is commonly based on old English decisions that intoxication is never an excuse for crime and that "no man can plead that he should be exempt from the law by reason of not knowing or not being able to control the extent and force of his acts, by reason of being drunk, and that drunkenness is a voluntary insanity, and those who use alcohol to that degree know full well the consequences of that act." These are the extremes of the question as to how far inebriety may coexist with irresponsibility. It is only of late years that there has been enough of practical psychology known by physicians to enable them to grapple with this problem. And still fewer have had that assurance of their convictions to support them against an intrenched and popular doctrine that has ruled the courts for three centuries. The Congress of Psychology, held at Paris during August, 1889, as reported in the *Press and Circular*, considered this subject and took formal action thereto, according to which it is proposed that the government should be called upon to take steps to more thoroughly protect society against criminal dipsomaniacs, and for that purpose to establish special asylums for the treatment of hibitual drunkenness, this proposition was adopted by the assembly unanimously.

EDITORIAL NOTES.

HOME.

THE ROOSEVELT HOSPITAL, NEW YORK.—The Syms Operating Theatre of the Roosevelt Hospital has been commenced. It will occupy a space of 90 by 75 feet and will cost from $150,000 to $175,000. The balance, then remaining from the bequest of $350,000, will be invested as an endowment fund.

DR. JOSEPH Y. PORTER, who recently resigned from the Army, has applied, by means of a bill in the Senate, for permission to be placed upon the retired list of Army surgeons. The important services of Dr. Porter during the yellow fever epidemic of 1888 are not likely to be soon forgotten.

PRIZE ESSAY ON EPILEPSY.—Dr. H. A. Hare, of Philadelphia, has taken another prize. This time it is for the best essay on epilepsy, and its value is 4,000 francs. It was awarded by the Royal Academy of Medicine of Belgium. Although Dr. Hare is the editor of the *Medical News* this item of news comes to us through another channel. He with Dr. Martin, also of Philadelphia, took two valuable prizes last summer with the same essay; one of these they declined.

FOREIGN.

SIR WILLIAM SCOVELL SAVORY.—A baronetcy was given by the Queen, on New Year's day, to the eminent surgeon, Mr. Savory, of London. Until recently he was the President of the Royal College of Surgeons, refusing a reëlection.

PROPOSED FIVE YEARS' COURSE OF MEDICAL STUDY IN GREAT BRITAIN.—The General Medical Council is seriously considering the propriety of compelling a five years' course of medical study as a requisite to registration and practice in Great Britain. The question will be up for discussion at the next meeting in May. The Royal College of Physicians will probably oppose the scheme, for the present, a preliminary vote having been taken by its Council which declares that it does not see its way to recommend the adoption of the increased term of study.

UNIVERSITY OF BERLIN.—Dr. Hans Virchow, son of Professor Rudolph Virchow, has been appointed to a professorship of Anatomy in the University of Berlin. Dr. Fritz Bramann, who tracheotomized the late Emperor Frederick in February, 1888, has been made extraordinary professor of surgery. He graduated in 1880 and has been Bergmann's assistant since 1887. He has recently declined a surgical chair at Greifswald.

COMPULSORY TREATMENT OF INEBRIATES.—Dr. Gairdner, of Glasgow, has lately delivered an address to the Midland Medical Society, in Birmingham, on "Drunkenness and Dipsomania: Medical and Legal Preventives and Remedies." He strongly supported more stringent measures for the compulsory detention of habitual drunkards, and on the same lines as those for the treatment of the insane. No medical practitioner can fail to see the absurdity of making the detention of habitual drunkards turn on their own consent.

DR. ROBERT KOCH, of Berlin, is reported to be still busily engaged in his work upon the bacteriology of the tubercle bacillus.

TOPICS OF THE WEEK.

THE EPIDEMIC OF INFLUENZA.

The following facts with reference to the origin and development of the present epidemic in Europe, as outlined in the *British Medical Journal* of January 4, will be of interest to American readers. The following notes contain a sketch, founded on the most reliable published information at present available, of the progress of the existing great epidemic:

The first cases recognized in Europe were observed in St. Petersburg about October 15, and by November 12 it seems to have spread over nearly the whole of European Russia, for we find it reported from such widely different points as Riga and Pskov, in the Baltic provinces; Wilna, on the confines of Poland; Kaluga and Moscow, in Central Russia; and Sebastopol, on the Black Sea. The number of cases in St. Petersburg alone has clearly been enormous, even if some hesitation is felt in accepting Dr. Butz's estimate of 650,000, or nearly three-fourths of the total estimated population. At present the information from Russia in Asia is too meagre to permit of the formation of a definite opinion as to whether the disease traveled from Siberia to St. Petersburg, or *vice versa*. Indeed, so far as is yet known, neither hypothesis can be maintained, for the epidemic was first noticed in Tomsk, an important commercial town of Central Siberia—separated by nearly 2,000 miles from St. Petersburg—about October 15; that is to say, at the very time when the epidemic was beginning to develop with rapidity in St. Petersburg. It appeared in the Caucasus about November 11, while at Merv, 500 miles to the east, it was so bad towards the end of December that 35 per cent. of the garrison were reported to be laid up. At this date the epidemic was decreasing in St. Petersburg, and even in Berlin.

According to the statement recently made by Professor Leyden, influenza broke out in Berlin towards the end of November, and spread very rapidly. It prevailed very severely during the middle period of that month, and Professor Leyden estimated that a third of the inhabitants of the city were suffering from it. It began to decline by December 25. Meanwhile it had spread rapidly in central and southern Germany, and was on December 18 present in nearly every important town from Hamburg in the north to Munich in the south. It was severely felt at Frankfort, and in Mainz the tramway service was partially suspended, owing to the large number of men on the sick list. It was present in Dresden on December 23, and had got as far south as Prague on December 27, on which day over 100 cases were reported there. Already, however, it had reached Vienna, and although the existence of an epidemic was denied on December 11, it appears to have been practically admitted on the following day; it was present in Belgrade on December 16, and at Bucharest and Sophia on December 24.

Meanwhile the epidemic had also extended westward, making its appearance in Brussels about December 12, and in Antwerp about December 16. During the following fortnight it spread extensively in these two cities, rendering it necessary to close the schools, and seriously affecting the garrisons. It had already appeared in Amsterdam, in which city it began to decline about December 24, making its appearance, however, about this time in other Dutch cities.

In Copenhagen, also, the epidemic appears to have begun early in December, and to have attained considerable proportions; the number of cases notified in the week ending December 21 was over 6,000. It has since declined, the number notified in the week ending December 28 being about 3,000.

Cases are stated to have been observed in Paris as early as November 17, but the disease first began to assume epidemic proportions about November 26, when a large number of persons employed in the Magasins du Louvre (the "Universal Provider" of Paris) were attacked; the number of cases in this shop rapidly increased, until it reached 670 on December 10. The epidemic does not appear to have prevailed to any serious extent in the French provincial towns, but so large a number of cases occurred at Monte Carlo as seriously to interfere with the engrossing occupation of gambling.

The epidemic was first heard of south of the Pyrenees on December 12th, at Malaga. On December 14th there were a few cases in Madrid, one of the earliest reported being that of the boy-King. It rapidly spread, causing much sickness among the soldiers, and by December 29th most of the Spanish provinces had become affected. It appeared in Lisbon and Oporto about the end of the third or beginning of the fourth week in December, and prevailed very extensively in both cities.

In Italy the first cases were reported from Rome on December 13th. A few days later its presence in Verona was officially admitted, but denied in Rome. It has prevailed extensively in Milan, Spezia and other towns, and a few cases were reported to have occurred in Turin and Gaeta on December 30th. The epidemic, however, does not appear to have taken any hold in Rome, and it is seriously doubted whether any true cases have occurred.

In this country the epidemic has not as yet attained serious proportions, and its presence has been questioned. A consideration of all the information at our disposal, however, leads to the conviction that there has been an epidemic prevalence of influenza in the west of London and in the western suburbs during the last ten days; it has, however, not spread with the rapidity observed in St. Petersburg, Berlin, Vienna and Paris. Its severity may be gauged by the statement of a correspondent practicing in Shepherd's Bush, who informs us that he had recently seen four or five new cases a day. There has certainly been no distinct epidemic of the disease in East London, but it is stated that an outbreak has occurred this week in Dr. Bernardo's homes. There is no doubt that influenza has prevailed very extensively among horses in this country. One firm of carters in London had over one hundred horses laid up at one time about a fortnight ago, and one of the railway companies a still larger number. The epizootic, though sufficiently extensive to raise the price of cartage, has not attained the proportions sometimes observed, and has not much interfered with the efficient management of the parcel traffic, which is so enormous at this period of the year.

Influenza began to become epidemic in the northern part of the United States about December 17th, when cases were reported in New York and Boston. It appears to have spread with considerable rapidity, so that a large number of persons in various parts of the United States had been attacked by December 27th.

Our Paris correspondent writes that M. Brouardel stated, during the discussion at the Academy of Medicine, that grippe is always characterized by the precursory symptoms of headache, nausea, prostration, symptoms which are not present in pulmonary catarrh, which has been described as grippe. According to M. Rochard the present epidemic is the same as that which appeared in 1837. Dengue fever, of which he has observed several cases in Senegal, is quite a different affection, and is confined to tropical countries. M. Colin was of the same opinion concerning the dengue fever. Grippe is independent of all human means of transmission, and travels through thickly populated centres as through uninhabited regions with the rapidity of light or electricity. This fact would distinguish it from dengue fever. M. Dujardin-Beaumetz considered that reserve should be made as to naming the present epidemic until the two affections have completed their evolution. Dengue fever is possibly the form influenza takes in warm climates. M. Bucquoy is attending a college in which grippe has appeared. All the patients complain of pain in the limbs, and especially in the knees; the latter is a symptom observed in dengue fever. The pillars of the fauces, and subsequently the soft palate, are very red, and a rash, which differs in hue and intensity, is almost invariably present. M. Bucquoy is not prepared to affirm that the affection is dengue fever, but he considers it a curious coincidence that this affection and grippe have appeared simultaneously. M. Roy de Méricourt, who has studied numerous cases of dengue fever at Reunion Island, is convinced that it is quite distinct from the present epidemic, and stated that it is always accompanied by a papulous eruption on the back of the limbs. The different varieties of grippe actually observed are due to the different temperament, age and sex of the patients. M. Olivier raised the question whether it would not be advisable to break up the schools and colleges in which grippe has appeared, but this idea was combated by MM. Brouardel and Bucquoy on the ground of the benign character of the affection and the facility of curing it. Complications are very rarely observed. M. Proust stated that at St. Petersburg the epidemic appeared to be disappearing. Dengue fever, which appeared in Constantinople last August, appears to be abating. It has presented all the characteristics of an infectious disease, spreading successively to all quarters of the town, and finally to the villages on the Bosphorus. It was usually found that the affection was transmitted by persons who had contracted it in an infected locality. Defective ventilation, overcrowding and a bad state of the drains were apparently favorable to its development. Linen was found to be an agent in the transmission of dengue fever. Dr. Schwartz observed isolated cases in different families which employed a washerwoman suffering from the affection.

Writing under a later date our correspondent adds: The epidemic of grippe assumes a more malignant character, and does not confer immunity by an attack; there are many instances of the same person being seized two or three times. The cephalalgic and muscular pains, which were at the onset of the epidemic the striking symptoms, are now combined with serious pulmonary trouble, bronchitis, pneumonia and broncho-pneumonia. Tuberculous conditions become aggravated, dangerous pneumonia and pleurisy set in, and in many instances cause death.

M. Potain's assertion that the spleen becomes enlarged is verified by a large number of Paris doctors. It is, therefore, more than probable that the grippe now reigning here is, as Dr. Pitain believes, an infectious illness. The daily mortality is 100 per day more than it was this time last year, which brings up the daily death rate to 300.

The War Minister and the Minister of Public Instruction have closed all the schools and *lycées* under their jurisdiction. In some of the French towns there are so many soldiers attacked with grippe that they are treated in the barracks, the hospitals being all overcrowded. The Paris *Assistance Publique* have set up temporary buildings and ambulance tents in the open spaces belonging to the Paris hospitals. The epidemic is so general that trade is injured; butchers and bakers in a pecuniary sense suffer considerably; entire loss of appetite habitually attends an attack of grippe, but those not attacked complain of want of appetite. Paris has seldom witnessed such a sad Christmas season; gaiety seems to have passed away from Paris life for a time; the season of *étrennes* is one of illness and convalescence—some recovering, others seized.

Our Vienna correspondent writes: A third part of the whole population of Vienna was, and is, suffering from influenza. In the majority of cases the disease had the nervous and catarrhal character; the gastric symptoms had been observed in a relatively small number of cases. In the vast majority of cases the epidemic ran a rapid and mild course; but, on the other hand, I have full authority to state that the influenza was the immediate cause of death in some patients in the General Hospital who were suffering from various conditions of the lungs, such as bronchitis, pleurisy, catarrhal pneumonia, etc. In some cases the influenza itself was the cause of the development of catarrhal pneumonia with a fatal issue. In general, the influenza had a deleterious influence on those patients who had already been weakened by other ailments. In one case in the General Hospital, influenza became complicated with encephalitis, and led to a fatal issue, as was proved by the *post mortem* examination. The rumor that the epidemic had also given origin to typhoid fever is false. Great embarrassment has been produced by influenza in the obstetrical departments of the General Hospital, as the commencement of real puerperal fever can frequently hardly be distinguished from the prevailing epidemic. The duration of the affection is very short, from 24 to 36 hours, but relapses are the rule, and the affection then lasts 8 and 10 days, and even longer.

Besides the principal types of the affection there are some of peculiar character. In my own case nausea was the most distressing feature of the complaint. I fell ill quite suddenly with symptoms of fever and prostration and a sense of weariness in all the limbs; I had a temperature of 40° C. and severe headache. Owing to the pyrexia, I had also delirium, which made those attending me fear that the disease was typhoid fever. The illness came to an end in twenty-four hours, when I felt only weary and prostrate; but in a few days relapse occurred; the symptoms were, however, less severe than in the first attack. Antipyrin, brandy, and the application to the head of cold compresses of vinegar and water gave some relief.

Last week the number of applications for admission to the hospitals on account of influenza was exceedingly great. For many years the hospitals have not been so crowded as they are at present. On Sunday, December 22, about 70 men and 40 women, suffering from influenza, applied for admission into the General Hospital; out of these only 50 could be admitted, and the rest had to be sent away for want of beds. At ordinary times from 30 to 40 persons are at the most admitted into the General Hospital on Sundays. The same proportion prevailed in the other Viennese hospitals. Under these circumstances extraordinary measures had to be resorted to, and at the instance of the director of the General Hospital, Prof. Charles Böhm, and the Statthaltereirath, Dr. v. Karajan, as well as the directors of the two clinics of internal medicine, Profs. Nothnagel and Kahler, the so-called clinical "Reservezimmer" (reserve rooms) were placed at the disposal of the patients. On the evening of the same day all the clinics and wards for internal medicine were overcrowded. For urgent cases an affiliated branch of the General Hospital was placed at the disposal of the patients suffering from the epidemic. This institution, which is situated at Währing, a suburb of Vienna, is a small hospital, and contains only 110 beds; out of these seventy were occupied on the same day. The Wieden and Rudolphstiftung hospitals, which were also overcrowded, had the patients transported into the Kaiser Franz Joseph Spital, which, on other occasions is reserved for cases of small-pox, etc. Should these measures prove insufficient, emergency hospitals will have to be erected.

The epidemic has been very severe among the tramcar and postoffice employés; among the latter, those whose work exposed them much to the weather suffered most.

Among the pupils and teachers in the public schools influenza is so prevalent that the Christmas holidays have been prolonged. In the Imperial and Royal Opera, the performances had to be very frequently changed owing to the sudden illness of the singers. A considerable increase of the epidemic has taken place among the troops of the Vienna garrison, in the 21st Jägerbataillon. Almost all the officers and a great part of the troops have suffered from the disease; and the same is true of several other barracks in Vienna. The druggists are doing an enormous trade in antipyrin, quinine, phenacetin, salicyl, etc. Medical men have frequently to make from forty to fifty visits a day. The Christmas holidays and the New Year's eve (*Sylvesterabend*), which is usually one of the merriest evenings in Vienna, have been comparatively melancholy. Prof. Nothnagel had the opportunity of making clinical observations of influenza on himself.

The epidemic seems to have reached its highest point in Vienna, but no exact statistics are yet forthcoming.

Numerous cases of influenza are announced from Lemburg, Cracow, Buda-Pesth, Temesvar, Klausenburg, etc.

THE EPIDEMIC IN NEW ENGLAND.

Simultaneously with the appearance of influenza in Europe, an epidemic of this disease has been raging in Boston and vicinity. Thousands of cases have been reported. The disease comes on like a severe cold, but with much greater prostration of the muscular forces, backache and insomnia; considerable fever generally attends it from the first. In some it takes the form of a severe cold in the head, with headache and eyeache; in others, bronchial symptoms predominate; in others muscular pains predominate, and the mucous membranes are almost immune; in all, there is loss of appetite, and more or less gastric disturbance.

While resembling malarial fever in being of atmospheric origin, and in its wide diffusion, as well as in its probable contagiousness, influenza, unlike malaria, has no clearly defined native haunts, no known telluric source. Everything leads logically to the conclusion that the causal agency must be referred to an atmosphere vitiated by a living organism which multiplies and propagates itself *ad infinitum*, which affects individuals without regard to age or constitution, smites them suddenly without any period of incubation, then disappears, after a period of from four to eight weeks of prevalence, and does not generally come again until after the lapse of several years.

Care as to diet, care as to work, care as to the hours of sleep, etc., are important in times of epidemic, if one would be fortified against the invasion of the unseen atmospheric foe. It would seem hardly needful to inculcate the necessity of wearing warm clothing, and avoiding the depressing influence of cold and especially damp cold, but physicians who would be counsellors in hygiene cannot too much insist on these matters.

Attention to the bowels, rest in bed, a bland diet, phenacetine or antipyrin for the pains, some expectorant for the cough, sulphonal or Dover's powder for the insomnia, quinine as a tonic, and the self-limitation of the process, result usually in a fair degree of comfort and convalescence with a diminished vigor in from three to six days. —*Boston Med. and Surg. Jour.*

THE September number of the *Aerztliches Vereinsblatt* (the organ of the German Medical Association) gives a list of the various medical societies which belong to the German Medical Association, together with the names of the officers and the number of members in each society. This list enumerates 219 societies, with 10,557 members.

PRACTICAL NOTES.

COCILLANA.

At the meeting of the New York Academy of Medicine, December 17, 1889, Dr. R. W. Wilcox read a paper upon Cocillana, of which the following abstract appears in the *Medical Record* of January 11: He said that his studies in apomorphia, the results of which had modified his treatment of acute bronchitis and given him a clearer idea of the characteristics which an expectorant should possess, had led him to seek further to find one which should be effectual in doses of longer interval and without the addition of the bromide, which was frequently objectionable. In May of this year there was placed in his hands a supply of the concentrated tincture of cocillana. The source of this drug was the bark of an undetermined species of guarea, which was discovered in Bolivia in 1886 by the eminent botanist, Prof. H. H. Rusby, of the College of Pharmacy, who first brought specimens to this city. The principal physiological action of the drug in its crude state (powdered bark) was the production of nausea and a desire to vomit, with metallic taste in the mouth within half an hour after its administration; this nausea being accompanied by an early discharge of mucus, and later by dryness of the throat. Its action, then, might be stated to consist of stimulation for some hours of the vessels and glands of the mucous surfaces, more especially of the respiratory tract with subsequent diminution of activity (sedation).

The dose of the concentrated tincture of the bark varied from one-half to two fluidrachms, given every two to eight hours. He believed, however, that the fluid extract, in doses of from five to twenty-five minims, at the above-mentioned intervals, would, on account of the avoidance of alcohol, be more satisfactory in acute, and, probably, in chronic diseases. Having made a comparison of the effects of the drug with those of apomorphia in acute bronchitis, he stated that the expectorant effect of cocillana was not the first stage of nausea, as was shown by the fact that an increase of appetite was usually observed even under the administration of full physiological doses, while the fulness of the pulse under them remained unchanged.

Useful in Chronic Dry Bronchitis.—Dr. Wilcox related a number of cases in which cocillana was used, and went on to say that it was probable that in subacute and chronic dry bronchitis we found the larger field for its employment. The facts that its expectorant effect was more sure than either apomorphia or ipecacuanha in liquefying bronchial mucus, that it increased the appetite, and that it acted to some extent as a laxative, perhaps by stimulation of the intestinal mucipa-rous glands, all commended it to us. Further, expectoration was not so much influenced by warm diluent drinks as in the case of apomorphia, ipecacuanha, or carbonate of amonia, although cocillana itself would produce a slight perspiration. In chronic bronchitis with viscid expectoration it would render the sputum liquid somewhat more surely than ipecacuanha, and it had the further advantage of not causing nausea. At times, also, the formation of mucus seemed to be checked. On the other hand, in cases of senile bronchitis, particularly in cases of calcified costal cartilage, it might so markedly add to the bronchorrhœa that it became absolutely dangerous, and particularly because it was not a stimulant to the respiratory centre, like belladonna and strychnine. In these cases, then, it was useful only so far as it liquefied secretion.

Also in Chronic Pulmonary Disease.—Having related another series of cases, he said that in chronic pulmonary disease it could be seen that cocillana had almost its only use in liquefying secretion and relieving the acute exacerbations of associated chronic bronchitis. Under its use cough and expectoration diminished, and the night-sweats, inappetence and constipation were relieved, and in general it might be said to be preferable to ipecacuanha. Naturally, when cough was due to pleuritic exudation, or was laryngeal or pharyngeal, cocillana would fail, as would all the other expectorants. In the latter instances he doubted whether local applications of the drug would be effectual.

In conclusion he stated that he believed cocillana to be superior to apomorphia, except in cases of acute bronchitis, when taken within the first forty-eight hours. It was certainly preferable to ipecacuanha, in that it did not so readily cause nausea and metallic taste in the mouth, and, moreover, assisted regular movement of the bowels. It must yield to carbonate of ammonia in chronic senile bronchitis, although the heart-beat and pulse became stronger under its use; nor could it stimulate the respiratory centre like strychnia. It was immeasurably safer in any stage of acute bronchitis than pilocarpine, because it did not depress the heart's action. On the whole, he believed that it could fully replace ipecacuanha (which was now becoming expensive from exhaustion of the supply) in every sphere of action, and that in many cases it could be substituted with advantage for apomorphia, carbonate of amonia, strichnia, and other drugs, classed with more or less reason as expectorants.

LABORATORIES.

New York and Brooklyn have four well-equipped pathological and biological laboratories. The trouble now is to find workers in them. "The harvest is rich but the laborers are few."

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

Section on Orthopædic Surgery.

Stated Meeting, November 15, 1889.

A. B. JUDSON, M.D., CHAIRMAN.

The paper of the evening, on

THE TREATMENT OF TALIPES EQUINO-VARUS BY CONTINUOUS LEVERAGE,

was read by DR. H. L. TAYLOR. Viewed from behind, this deformity is a curve of the foot and leg, with its convexity directed outward. In order to exert continuous leverage a splint is applied to the inner or concave side of the curve, and then the deformity is reduced by drawing the foot and leg to the splint. By progressively bending the splint valgus may be produced. Leverage should thus be applied to overcome first the varus and afterwards the equinus, the heel cord being left until the plantar fasciæ have yielded. Tenotomy does not take the place of systematic mechanical treatment. Much disappointment has been caused by failure to realize that it is only an incident in the treatment of club-foot.

The appliance used by Dr. Taylor consists of a steel shank which is easily bent according to the requirements of the case, pivoted to a foot-piece composed of a sole plate and a side plate. It is worn inside the shoe; the shoe cannot hold the foot, as it has no certain grasp, and the foot slips and turns inside. The foot is to be held and gently forced into position by the properly applied pressure of straps and buckles, the sole being kept in contact with the sole plate by a three-tailed adhesive plaster applied to the leg, a piece of webbing being attached to the plaster and buckled to the heel of the apparatus. Moderate continuous stretching thus applied is irresistible, and is easily borne by the patient. During the prolonged after-treatment the patient goes about quite independently, the brace being completely concealed by the shoe and stocking.

DR. V. P. GIBNEY had formerly corrected both the varus and equinus at once, but for some years past he had been in the habit of first converting the equino-varus into equino-valgus and then reducing the equinus, the after-treatment being conducted with a retentive apparatus. He preferred taking six months to reduce the deformity, which can be done in many cases without tenotomy; but a speedy method consists in giving an anæsthetic and molding the parts for ten or fifteen minutes, and then reducing the varus by manual force. A light plaster of Paris bandage holds the foot in equino-valgus for four weeks, and then the tendo Achilles is cut, and for ten days the foot is held in calcaneo-valgus. An apparatus is then applied and the parents are instructed in regard to the after-treatment. In those cases in which the bones are unmistakably distorted and elongated on one side and atrophied on the other, he had tried various methods, including excision, stretching, and gradual and rapid replacement, with good results.

DR. N. M. SHAFFER preferred to use an apparatus applied on the outer side of the foot, believing that if applied on the inner side it will have an improperly located centre of motion, as was demonstrated on the blackboard. Points of pressure, however, are made as in the apparatus described by Dr. Taylor, on the inner aspect of the heel and the inner and upper aspect of the tibia, while between these points of pressure there is inserted a centre of motion to the outer side of and below the external malleolus. The operator is thus enabled, by the use of the key, to exert a real traction force on the resisting lateral tissues, the heel being thrown downwards and outwards, after the straight line is reached, instead of upwards and outwards. He had not found it necessary to use adhesive plaster in this method of reducing the deformity. He favored the application of exaggerated force at very short intervals, if reduction can not be effected by constant pressure. As soon as this rigorous treatment has made it possible for the patient to properly apply the foot to the floor a walking shoe is applied, which makes use of the weight of the body as a means of overcoming muscular and ligamentous resistance.

DR. R. H. SAYRE said that the treatment of club-foot is simply a question of bringing the foot into a normal position and keeping it there while shortened tissues are gaining length and lengthened ones are contracting to their proper dimensions. If resistance is encountered, cutting the fibres is certainly preferable to tearing them by the exercise of great force. Whether or not a tissue can be stretched may be determined by putting the part on the greatest possible stretch and, while so stretched, making point pressure with the finger or pinching the part between the finger and the thumb. If a reflex spasm is obtained, this tissue will not stretch. Dr. Taylor has well said that tenotomy and osteotomy are only steps in the treatment, and the method to be adopted is to keep the foot in the normal position while it is growing. We may derive encouragement from the marked results of the Chinese in their persistent efforts to deform the foot.

DR. JUDSON preferred a lever on the inner side of the foot, and used a single strip of adhesive plaster wound around the foot and buckled on the side of the foot-piece. In this way the ankle is drawn into the concavity, the foot is untwisted and the heel is held in contact with the foot-plate. In the new-born the deformity is to be reduced

in the most convenient of a half dozen approved methods. This must be done gently and thoroughly by the time the child begins to walk. After that a light brace, worn for many years, should hold the foot on the right side of the dividing line between varus and valgus, so that every foot-fall of the growing child shall give an impulse toward the normal shape.

DR. RIDLON thought that orthopædic surgeons frequently failed to recognize the fact that the after-treatment in these cases is of the same duration whether the deformity be corrected in a few days by operative means, or only after many months or years by instrumental means. It is doubtful if it be justifiable to confine a patient for so long a period as is usually done when instrumental means are employed, simply to avoid an operation. Another objection to the mechanical treatment of these cases is that valuable time is lost during the period of growth, for a crooked foot grows crooked, and a straight foot straight. It would, therefore, seem desirable to correct the deformity at the earliest possible moment, in order to get the benefit of the growth in the corrected position, and in order, also, to get the correcting force of the superincumbent weight, as described by the last speaker. Congenital cases in very young children, which yield readily to stretching, may be treated in that way; and other cases, which can in a reasonable time be corrected by intermittent traction, would seem to be suitable cases for mechanical treatment; but the severe forms of club-foot should be subjected to more vigorous measures.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

La Grippe—Contagiousness of Tuberculosis—Professor Tarnier.

The present epidemic of influenza or la grippe has caused a great scare in Paris, not from its lethality but from the rapidity of its extension, affecting all classes of the population. It has even tried the wits of the doctors, who have been quite perplexed as to the real nature of the malady, some looking upon it as dengue, although in many respects they recognized the symptoms in it of an affection familiarly known to them as la grippe. The subject has even been discussed at the Academy of Medicine, and at a recent meeting Dr. Proust read a report on a work by Dr. Lebrun, of Bayreuth, on the epidemic of dengue which recently prevailed in the Levant, which, when compared with the present epidemic of Paris, will be found to be quite a different affection. Dengue is characterized by a sudden invasion, the fever at the commencement rises to 2° or 3°, the pulse is very rapid, the patient complains of cephalalgia, giddiness, severe pains at the back of the neck, in the joints and in the muscles generally, often there is nausea or vomiting, and rarely any cough. In a short time an erythematous eruption makes its appearance, recalling that of scarlet fever or measles. This eruption is followed by furfuraceous desquamation. The malady is of short duration, but the convalescence is prolonged. Dengue is epidemic and contagious, and is propagated from one village to another, not according to the distances which separate them, but according to the frequency and the facility of the communications which exist between them. It would appear that it may be propagated to animals. It has not been inoculated from man to man. Dr. Proust observes that there is nothing in symptoms attending the present epidemic which would permit one to affirm that the malady is dengue, and that grippe is sufficient to explain all the symptoms, even the polymorphous eruptions belong to grippe. Dr. Brouardel insisted on all that has been affirmed by Dr. Proust, adding that the epidemic is benign and identical in all the capital cities of Europe, and shows that the term grippe is the only one that suits this epidemic. All the great epidemics of grippe have presented the same characters as the present epidemic, and those who seem to find the symptoms of catarrh in every case of grippe are in error, as these symptoms are often found wanting. In the history of the epidemic of grippe of 1580, they were not even alluded to; on the contrary, gastric troubles, nervous phenomena, and polymorphous eruptions have been noted in all the great epidemics. Dr. Bouchard remarked that dengue is contagious, that it extends after the manner of maladies conveyed by man, and frequently, one may say who the person was that brought the malady to a village or to a house. With regard to grippe, there is nothing of the kind. The malady runs over great distances in one night; it affects 50,000 persons in a large city, which does not look as if there was any contagion in the matter. Such a mode of propagation is not explicable by infectious germs brought from a distance, which would have left traces *en route*. It is explained, on the contrary, by cosmic modifications extending at the same time over vast regions. It may be remarked that epidemics of grippe are always brought by the easterly wind. At the following meeting of the Academy Professor Germain Sée stated that the medical societies of St. Petersburg and of Berlin had also been occupied with the present epidemic. One point on which every one is agreed is that the reigning malady is grippe and not dengue. A second point on which every one is agreed is that whilst manifesting itself under different forms, the malady is one and should be considered a ca-

tarrhal fever. At St. Petersburg as at Berlin, at Berlin as at Paris, three principal forms have been observed: the first, nervous, with tendency to syncope, intense cephalalgia, sudden and high fever, of very short duration; the second catarrhal, with violent and convulsive cough, lasting from ten to twelve days; the third, gastric, with repeated vomiting, and the duration of which is longer than that of the nervous form, but is much shorter than that of the catarrhal form. M. Sée then insisted on the frequency of a complication of the catarrhal form, catarrhal pneumonia or fibrinous pneumonia, often very grave. He insists also on the state of debility which follows the gastric form. Whether the pneumonia of grippe is the ordinary or a special pneumonia, having a particular microbe, is a question that is being studied. It appears, however, to be established that the pneumonia now prevailing is infectious, if one may judge by the enlargement of the spleen which ordinarily accompanies it, as is met with in typhoid and marshy fevers. Dr. Dujardin-Beaumetz insisted on the special physiognomy of the present epidemic, which resembles nothing of what medical men have seen during the last thirty years. He does not believe that one can yet affirm that one has to deal only with grippe. Dr. Le Roy de Méricourt referred to the history of an epidemic of influenza which occurred in 1752, and of which the symptoms were exactly those of the present epidemic, in which there is nothing to be seen of dengue.

With reference to the debate on the contagiousness of tuberculosis between married couples, Dr. Leudet read a note in which he concludes that of families he had known personally and attended for the last twenty-five years, of 112 widowers and widows the companion of whom had succumbed to phthisis, seven only were affected with tuberculosis. He therefore affirms that contagion, even between married couples, is extremely rare.

Professor Tarnier has been elected Vice-President of the Academy of Medicine for the year 1890.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Remedies for Typhoid Fever—Annual Meeting of New York County Medical Association—Meeting of Pathological Society—Death-Rate in New York.

While there was certainly very little that was new brought out in the discussion on the treatment of typhoid fever at the last meeting of the Academy of Medicine, the general opinion expressed was somewhat significant from the fact that very much less stress was laid upon the use of baths and other applications of cold than by Dr. Bausch, in the paper on "Hydrotherapy" which he read before the Academy in the autumn, and by several of the speakers who took part in the discussion of it.

The principal paper of the evening was by Prof. Wm. H. Thomson, of the University Medical School, whose deductions were mainly based on the typhoid cases which he had met with in his service at the Roosevelt Hospital during the past nine years. Having made some preliminary observations on the fallacies of hospital statistics, he gave the general typhoid statistics of the Roosevelt, and then stated that from 1881 to 1889, inclusive, he had treated 163 cases. Excluding eight cases which proved fatal within five days after admission, there were 155 cases, with a death-rate of 10.32 per cent. He gave an abstract of the histories of the patients which died, and then referred to the large number of relapses among his patients, amounting to 40, or 24.5 per cent. In the great majority of these there was no appreciable cause for the relapse, such as indiscretion in eating, etc. Intestinal hæmorrhage occurred in 4.9 per cent. of the cases.

In his management of typhoid fever, Dr. Thomson said, his special aims were, first, the treatment of the patient, and second, intestinal antisepsis. For many years he has acted on the theory that we have in this disease a reversion of the gastric fever to that of the new-born infant. He therefore never gives milk in its full strength, but always diluted one-half, or even to a larger extent, with lime water, which he considers an antiseptic of no little value. He would never think of giving beef-tea to a typhoid, believing it to be positively injurious under the existing conditions. In his opinion the rôle of gastro-intestinal fermentation in causing diarrhœa and spreading the intestinal lesions is a very important one. He said it was his common practice to give 10 grains of saccharated pepsin every three hours, and he often gives with it 10 minims of diluted muriatic acid. In addition to the pepsin he also gives subcarbonate of bismuth in the same doses and at the same intervals. During the past few years he has tried a number of the newer antiseptic agents, such as salol (which he gave to the extent of 40 grains a day), naphthaline, thymol, etc., but he has now returned to the use of pepsin and bismuth, as he believes them to be most reliable remedies for the purpose required. One result of this treatment he has found to be a great diminution of tympanites, and another, the prompt checking of diarrhœa; in fact his patients often became constipated.

In cases of prolonged convalescence with dry tongue he has found nitrate of silver very useful, and this agent is, in his opinion, the best remedy we have for chronic dysentery and chronic diar-

rhœa. In typhoid fever with dry tongue, as a rule he first gives oil of turpentine, and later nitrate of silver.

He does not regard high temperature as dangerous of itself; but when the other symptoms are also severe he thinks antipyretic remedies are called for. For the past nine years he has given up all medicinal antipyretics, for the reason that, being muscular depressants, they are apt to have a bad effect upon the heart. This, he believes, is not the case as regards the external application of cold. He formerly employed cold baths, but now commonly resorts to the use of the coil for the reduction of temperature. Such measures, however, are never called for, in his opinion, unless the temperature is at least 104, and even with this amount of fever are not required in all cases. In conclusion he said that if the disease had not lasted for more than a week he believed a purge of calomel and compound jalap powder was often very useful. Inunction twice daily with linimentum aquæ coleis was also of service.

Dr. T. E. Satterthwaite said that his experience with typhoid fever commenced in 1870, during the Franco-Prussian war, when he was in the medical service of the Prussian army, and that at this time he had ample opportunities for studying the disease, as there was a very serious epidemic of it among the men during 1870 and 1871. In this epidemic everything was tried—cold, large doses of quinine, free stimulation with all kinds of alcoholic drinks, etc. At first the results were not at all satisfactory, but later a plan of treatment was formulated which proved very successful.

The treatment was begun with small doses of calomel, and he believed this to be an excellent plan if nausea and vomiting, and possibly constipation, were present. It prepared the way for further measures. In the second week they began the use of what Dr. Thomson would call an intestinal antiseptic, viz.: muriatic acid. It was usually given in three-quarter drop doses, frequently repeated, and combined with infusion of ipicacuanha, which was called for by the bronchitis which prevailed. In the third week cinchona in some form was added, and in the fourth week the patient was usually given light wine freely. This was taken, in quantities of from one to two ounces, at regular intervals of four hours. Afterwards the alcohol was withdrawn, but the cinchona was still continued. The patient was still kept for a long time on liquid or semi-liquid food, and great care was otherwise taken to prevent relapses. Dr. Satterthwaite said he was not a believer that these relapses were ordinarily brought on by errors in diet, and that in his opinion they were due to a real recurrence of the disease.

On the whole, he continued, the great success of the treatment depended on the alimentation. The typhoid fever patient required large quantities of fluid, and milk diluted with lime water was probably the best article of diet as a rule. In the latter part of the epidemic referred to no cases at all were lost except those in which there was very severe diarrhœa or intestinal hæmorhage when the patients were admitted to the hospital. In this disease he believed it was important not to over-stimulate and not to over-medicate. Neither should too much food be given, as he thought the patient would do better if kept a little under- rather than over-nourished.

As to antipyretics, the simplest, he thought, were the best; and the coal tar series of agents he believed to be dangerous, on account of their depressing action. High temperature, however, was not so dangerous as had been supposed by many. The great danger was from sepsis, and muriatic acid was a good antiseptic as well as antipyretic; while it was, moreover, a very safe remedy.

Dr. E. G. Janeway spoke of the difficulty of judging of the value of any treatment on account of the variation in the disease at different times and under different circumstances. He had had the opportunity of studying typhoid outbreaks in a number of institutions, and in some of them the fact that a large number of cases apparently aborted might have been taken by an inexperienced observer as evidence of the good effect of the treatment employed. Thus, in one outbreak at the Deaf and Dumb Asylum at New York, there were fifty cases, and of these only one-half ran a regular course. The others aborted, yet without special medication, and only two out of the fifty patients (or 4 per cent.) died; although no particular line of treatment was adopted. The abortive cases, he believed, were explained by the fact that typhoid fever, like some other febrile diseases, has a febricula. In this and other outbreaks which he had seen a large number of individuals were seized with all the characteristic symptoms of typhoid, but only a comparatively small number of the cases went on through the regular course of the disease. This undoubtedly showed a capacity in some persons to throw off the disease even when its evident symptoms had made their appearance.

In speaking of the treatment Dr. Janeway said he could see no objection to giving one or more doses of calomel, but he thought it extremely doubtful whether the disease then was ever really aborted by any such means. As regards the use of antipyretics of the newer class, he could only say that he had found them extremely serviceable. In his experience they rendered patients exceedingly comfortable with the least possible disturbance; while it was impossible to use baths without occasioning more or less disturbance. In some cases, however, this class of antipyretics did not have the desired effect, and in such in-

stances (which were comparatively rare), it was necessary to resort to baths. He did not wish to be understood as claiming that antipyretics cured the disease; but he did believe that they had a most excellent effect in allaying nervous irritability.

When the heart's action was weak, the use of some cardiac stimulant was called for in connection with the antipyretic. In this connection he referred to an effect which he had lately noticed from strophanthus which would, as a rule, contraindicate this agent in typhoid fever, and this was the production of diarrhœa. In four cases this result was undoubtedly produced by the drug, although the particular article employed was obtained from the most reliable sources. He therefore thought it would be safer to resort to the older remedies, such as digitalis, caffeine, the ethers, and camphor. Camphor in some form, given in addition to such other remedies as were called for by the symptoms, he believed to be one of the most useful remedial agents that could be employed in typhoid fever. It not only strengthened the heart, but was also an excellent antipyretic.

As regards the matter of antisepsis, alcohol seemed to be of service, especially when ulceration was apparently occurring. If diarrhœa was present, he preferred brandy, and if the stomach was irritable, champagne; while if the patient was poor whisky was undoubtedly the best form in which to use it. The amount of alcohol to be employed must of course, be left to the judgment and experience of the physician.

In regard to relapses, he said in conclusion, their causation constituted a question about which we really knew very little. His own rule was never to allow the smallest quantity of solid food until fully ten days after complete defervescence —that is, until there is absolutely no rise of temperature either in the morning or evening. Yet even with this precaution he had seen some cases in which the relapse was apparently directly due to the diet taken. In other cases, however, the relapse seemed to be entirely independent of any such circumstance.

Dr. George L. Peabody said that it had never seemed to him that beef-tea was so poisonous or injurious to typhoid fever patients as Dr. Thomson represented. Well made beef-tea, he believed, on the other hand, was decidedly beneficial; both because it was a cardiac stimulant and because it was good for the appetite. The small amount of potassium salts which such articles of diet as beef-tea and mutton broth contained was unquestionably strengthening to the heart. As to milk, his rule was to let the patient drink it undiluted at first. Afterwards, he added a small amount of lime water; and if this was not well borne, he then resorted to peptonized milk. He said he was perhaps more bold or rash than others, but he often allowed solid food before the fever had wholly gone, and he did not believe that any harm could result from such a practice, provided the food was of a proper character and properly prepared. If a patient was really hungry in the latter part of the third week or during the fourth week, he did not hesitate to give a small portion of tender steak or chop very finely subdivided, and often, in addition to this, though at another time, half an egg or a whole egg. He was inclined to believe that relapses were in reality due to reinfection, and that they were much more frequently brought on by allowing the patient to get up too soon than by the too early use of solid food. After all, finely subdivided meat was likely to be digested in the stomach, if at some part of the day the temperature was normal.

In cases with dry tongue and meteorism he had been in the habit of giving 10 drops of turpentine five times a day. Lately, however, he had met with a case in which it appeared to produce acute nephritis; although after the remedy was discontinued all the renal symptoms disappeared. As to intestinal antiseptics, he had not been very favorably impressed with their efficiency.

With the new antipyretics his experience, like that of Dr. Janeway, had been very favorable. Even when given in the very large quantities in which they were recommended by the Germans when they were first introduced, he had not found them productive of harm, and in smaller doses, if given with proper care, they seemed quite free from deleterious effects. Five grains of antipyrin every hour often produced the most happy results. His favorite antipyretic treatment, however, was the use of cold. This remedy had stood the test of time, and he did not believe that anything else was quite equal to it. He preferred the cold bath, and next to that the cold pack. In the way of stimulus he preferred whisky, because it was the form of alcohol which the average patient could obtain the purest and at the least cost. As regards the abortion of typhoid, he believed that quite as many cases aborted without as with medication.

Dr. J. West Roosevelt said that he was very glad to hear Dr. Peabody speak so confidently of the good effect of properly prepared solid food. For some time past he had been tentatively pursuing a similar course with more or less fear and trembling, and he said he should now feel encouraged to go on with the practice, especially as he had never observed any but favorable results from it.

There was an extremely interesting session of the Pathological Society on the 15th of January, when the Middleton Goldsmith lecture for 1890 was delivered by Dr. William Pepper, of Philadelphia, who took for his subject, "Hepatic Fever." A special feature of the occasion was the presentation to the society by ex-President,

W. P. Northrup, M.D., on behalf of the donors, of fine portraits of the three founders of the Pathological Society, Dr. Lewis H. Sayre, John C. Peters and Middleton Goldsmith. The new President, Dr. J. West Roosevelt, was in the chair, and many prominent and distinguished medical men were present.

At the annual meeting of the New York County Medical Association, held the third week in January, the following officers were elected: President, Charles S. Wood, M.D.; Vice-President, George T. Harrison, M.D.; Recording Secretary, P. Brynberg Porter, M.D.; Corresponding Secretary, Augustus D. Ruggles, M.D.; Treasurer, John H. Hinton, M.D.; Member of the Executive Committee, A. Palmer Dudley, M.D. On this occasion an eloquent tribute to the memory of the late Dr. Isaac E. Taylor was delivered by Dr. John Shrady, and suitable resolutions in regard to the death of Dr. Taylor were adopted. A committee was also appointed to prepare memorials of the lamemented Dr. Lewis Hall Sayre and other recently deceased members of the association. The County Association now has a membership of nearly 450, and during the year that is just past it received the remarkable accession of 183 to its numbers, an increase of 70 per cent.

The Messrs. Appleton announce the publication at an early date of a course of six lectures on Abortion delivered this season at the College of Physicians and Surgeons by Prof. T. Gaillard Thomas. As the little book will embody the results of Dr. Thomas' vast experience during the past thirty-five years upon a subject in regard to which there is still a wide diversity of opinion and no little vagueness in the minds of many of the profession, but which is, nevertheless, one of the greatest possible practical importance, its appearance will no doubt be looked for with unusual interest.

During the first two weeks of January the death-rate of the city, owing, it would appear, to the effect of the prevailing epidemic of influenza, became unprecedentedly high; but of late there has been a marked diminution in the mortality, although the number of deaths per week is still considerably greater than in the early part of December. P. B. P.

ASSOCIATION NEWS.

Preparations for the Forty-first Annual Meeting.

To the Editor:—I write to state that arrangements for the next meeting of the American Medical Association are being made rapidly and satisfactorily by our several committees. The Committee on Halls and Hotels have completed their work. The general meetings will be held in our largest and finest theatre, the Vendome. A splendid hall has been procured for the meeting of every Section, and all of these are within two minutes' walk of the Vendome.

The Committee on Entertainments will do their duty, and will have in store much pleasure for all who may attend; but the entertainments will be so arranged as not to conflict with either general or Sectional meetings.

Our hotels and boarding-houses can accommodate as many as will come. May we not hope for two thousand at least?

The Committee on Reception will meet all incoming trains, and will welcome all who come, and aid them in securing places for rest and refreshment.

The charges at the hotels will be from $1.50 to $5 per day. There are only a few rooms, and in only one hotel, the Duncan, at $5. Rooms can be engaged beforehand by communicating with Dr. N. D. Richardson, chairman of the Committee on Hotels, or the undersigned.

Exhibitors should communicate with Dr. J. B. Lindsley, who has already procured a large hall for the exhibits. He is chairman of the Committee on Exhibits.

The chairman, with his secretary, of each Section should have his programme ready for publication early. The order of programme, as made out and sent to us, will be strictly observed in the publication for use at the meetings.

As local Secretary I will take pleasure in giving any information that may be desired. Yours, etc. G. C. SAVAGE, M.D.

Nashville, Tenn., January 20, 1890.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 18, 1890, to January 24, 1890.

By direction of the Secretary of War, the leave of absence granted Major Calvin DeWitt, Surgeon, in S. O. 146, Dept. of Dak., December 21, 1889, is extended to include February 27, 1890. Par. 5, S. O. 12, A. G. O., Hdqrs. ofthe Army, January 15, 1890.

By direction of the President, the Army Retiring Board appointed by War Dept. order dated January 8, 1890, from Hdqrs. of the Army, to meet at Los Angeles, Cal., will meet for the examination of Major Leonard Y. Loring, Surgeon, at San Diego, Cal. S. O. 18, A. G. O., January 22, 1890.

Capt. William G. Spencer, Asst. Surgeon (Ft. Bridger, Wyo.) granted leave of absence for one month. Par. 1, S. O. 4, Dept. Platte, January 20, 1890.

By direction of the Secretary of War, the extension of leave of absence granted Capt. Charles S. Black, Asst. Surgeon, in S. O. 1, Dept. of the Platte, January 1, 1890, is further extended to include April 30, 1890.

Capt. Charles S. Black, Asst. Surgeon, resignation accepted by the President, to take effect April 30, 1890. Par. 1, S. O. 18, A. G. O., January 22, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 25, 1890.

Asst. Surgeons T. A. Berryhill and A. R. Wentworth, ordered to examination preliminary to promotion.

THE

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ORIGINAL ARTICLES.

INFANTILE MORTALITY: ITS CAUSATION AND ITS RESTRICTION.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June 1889.

BY VICTOR C. VAUGHAN, M.D., Ph.D.,

PROFESSOR OF HYGIENE AND PHYSIOLOGICAL CHEMISTRY IN THE UNIVERSITY OF MICHIGAN, DIRECTOR OF THE MICHIGAN STATE LABORATORY OF HYGIENE, MEMBER OF THE MICHIGAN STATE BOARD OF HEALTH, MEMBER OF THE GERMAN CHEMICAL SOCIETY, HONORARY MEMBER OF THE FRENCH SOCIETY OF HYGIENE, ETC.

That the death-rate during the first five years of life should be higher than for the same number of years at any subsequent period might be expected to be true. There are many factors contributing to this result. Some of these are easily recognized, and might be largely eliminated without any great effort. Others are evident, but can not be prevented without radical changes in social life, while still others are obscure. So long as the weak as well as the strong continue to procreate their kind, infantile mortality will be great. So long as tuberculosis, syphilis, and even idiocy are not regarded as bars to the reproduction of the species, weak, diseased and mentally incompetent children will be born; and looking at it from a philosophic standpoint, it is better for the future of the race that many of these should die, but it would be better still had they never been born. "Multiply and replenish the earth" is followed with more persistency than any command of the decalogue, and too often without any thought of the kind of material with which the earth is being replenished. However, as deplorable as this thoughtless and often sinful assumption of paternity and maternity is, it is not so bad as the criminal means often resorted to in order to prevent it. Great infantile mortality is not so disastrous to the progress of the race as is fœticide.

It is the purpose of this paper to ascertain, 1, what the infantile death-rate is; 2, what are its most potent causes; and, 3, what measures might be resorted to in order to lessen it.

The number of births reported as having occurred in the United States during each of the census years ending June 1, 1860, 1870 and 1880, were respectively 1,072,090, 1,287,670 and 1,577,133. [See mortality volumes of the census reports for these years.] According to the mortality rate of the census year 1870, found by adding 41 per cent. to the deaths reported, the number of those born in the United States which reached 5 years of age are for those born in 1860, 784,545; for 1870, 942,304; and for 1880, 1,153,144. In other words, of those born in 1860, 26.8 per cent. died under 5 years of age, and this figure practically holds good for the years 1870 and 1880. Thus, a little more than one-fourth of the children born in this country die before they reach 5 years of age. Of the deaths under 5 years of age in 1880, 57.8 per cent. occurred during the first year.

Having ascertained the death-rate among infants, the next inquiry will be in regard to the causation of this mortality, which must be regarded as high. In the first place, is there any difference in the death-rate among those born and reared in cities and those born to the rural population? The following table gives us the best information which I am able to secure on this point:

TABLE 1.—Exhibiting the reported number of births and of deaths of those under one year of age in the United States during the census year 1880, classified in rural and city (49 large) populations, with distinction of sex. (Compiled from the Tenth Census of the United States, 1880, Vol. XXII, Mortality and Vital Statistics, Part 2, p. 634.)

UNDER ONE YEAR OF AGE.

Population.	Sex.	Tot. births during the Census Year 1880.	Deaths per 1,000 during Census Year of those Born Within the Year.	Deaths	Deaths per 1,000 of living population.
	M.	690,095	78.1	70,700	111.1
	F.	658,546	63.0	56,909	92.2
Rural—Total .		1,348,661	141.1	127,609	203.3
	M.	116,851	162.4	26,149	267.2
	F.	111,761	132.8	21,426	221.1
Cities (49 large) Total		228,612	295.2	47,575	488.3

NOTE.—For the names of these 49 cities, see pages 80–82, and 634, of the volume mentioned in the heading of this table.

Table 1 shows that infantile mortality is much greater in urban than in rural populations. This is undoubtedly due to a number of causes, some of which we can better appreciate after we have ascertained the diseases to which the great mortality is due. However, there is one point to

which I desire to call attention here. It might be supposed that the children born in cities are weaker naturally than those born in the country. In only the largest cities is the death-rate among children due to debility higher than in the country, and this is caused, to a large extent, by crowding, by want of proper food, and by neglect. Dr. Würzburg says: "According to Dr. L. Pfeiffer the death-rate from debility is seemingly greater in the larger than in the smaller cities. This supposition seems to obtain in a certain sense in Prussia, for the deaths from debility during the years 1878–1880 in seven cities with more than 100,000 population were 35.7, 36.7, and 38.7 per 1,000; and in sixty-one cities with populations of from 20,000 to 100,000, only 28.5, 29.4, and 29.9. These figures indicate that the death-rate from debility is decidedly greatest in the larger cities, while the average death-rate from debility in all the cities is yet lower than that in the rural districts. The high death-rate of illegitimates is an important factor in the cities; thus, Köln, with a death-rate of all infants of 24.06 per cent., loses 27.48 per cent. of those illegitimately born."

The death-rate from debility during the first year of life was, during the years 1875–77, for each 1,000 living children born in the whole of Prussia, 30.4; for those born in the cities, 28.9; for those born in the rural districts, 31.1. These figures show that the high mortality of children born in cities is not due to general debility or weakness of constitution, and show us that we must look for an explanation from some other source. In this search let us ascertain, from the following tables, to what diseases infantile mortality is most largely due.

TABLE 2.—Exhibiting the number of deaths reported from each of eleven diseases, in persons under five years of age and in each year of age under five years, together with the total number of deaths from each of these diseases in persons of all ages in the United States during the census year 1860. (Compiled from the Eighth Census of the United States, 1860, Mortality and Miscellaneous Statistics.)

DISEASE.	All Ages.	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Under 5.
Cholera Infantum	4,808	2,959	1,339	352	89	48	4,787
Convulsions	9,077	5,099	1,152	597	306	174	7,328
Croup	15,211	5,409	2,759	2,412	1,815	1,140	13,535
Diarrhœa	7,850	2,690	2,137	843	252	124	6,046
Dysentery	10,468	2,482	2,479	1,326	576	288	7,151
Inflam. of Brain	10,349	2,989	1,786	994	521	367	6,657
Measles	3,899	760	884	646	332	188	2,810
Pneumonia	27,094	5,645	2,624	1,456	760	496	10,381
Scarlet Fever	26,492	2,601	3,443	3,886	3,457	2,757	16,144
Teething	4,909	1,951	2,348	501	42	18	4,860
Whooping-cough	8,408	3,723	2,081	1,066	501	314	7,685

In the study of tables 2, 3 and 4 we are confronted with certain difficulties which it is at present impossible to wholly overcome. More than 17,000 deaths are reported as due to convulsions, and more than 4,000 to teething. How the deaths reported as due to convulsions should be apportioned to the various diseases of which convulsions form a prominent symptom, no one can tell with certainty. In Dresden 281 deaths were reported from July 11 to September 25, 1886, as due to convulsions. Subsequent investigation into the histories of these cases by a competent medical officer showed that primary disease of the nervous system was responsible for only thirty-six of these, while cholera infantum and diarrhœa caused the death of seven-eighths of those reported as dying of convulsions. These figures will probably hold good for the United States, and we are justified, I think, in claiming that more than 90 per cent. of the deaths reported as due to convulsions are really due to digestive disturbances.

TABLE 3.—Exhibiting the number of deaths reported from each of eleven diseases in persons under five years of age, and in each year of age under five, together with the total number of deaths from each of these diseases in persons of all ages in the United States during the census year 1870. (Compiled from the Ninth Census of the United States, 1870, Vital Statistics.)

DISEASES.	All Ages.	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Under 5.
Cholera Infantum	20,255	13,375	4,924	1,188	329	161	19,977
Convulsions	12,751	8,563	1,614	642	329	173	11,321
Croup	10,692	4,855	2,102	1,390	943	560	9,859
Diarrhœa	14,195	4,554	2,833	1,310	485	274	9,456
Dysentery	7,912	1,984	1,668	783	320	219	5,004
Inflam. of Brain	13,701	4,152	2,283	1,189	718	489	8,831
Measles	9,237	1,871	2,222	1,257	728	387	6,465
Pneumonia	40,012	7,252	3,686	1,929	1,046	653	14,566
Scarlet Fever	20,320	2,100	2,967	3,262	2,930	2,296	13,555
Teething	3,247	1,444	1,488	274	28	1	3,235
Whooping-cough	9,008	4,424	2,086	1,063	529	294	8,396

TABLE 4.—Exhibiting, according to the reports (with distinction of sex), the number of deaths in each 1,000, deaths in all ages from each of eleven diseases, in persons under five years of age and in each year of age under five years; together with the total number of deaths from each of these diseases in persons of all ages in the United States during the census year 1880. (Compiled from the Tenth Census of the United States, 1880, Vol. XII, Mortality and Vital Statistics, Part 2.)

DISEASES.		All Ages.	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Under 5.
Cholera infantum	M.,	13,168	673.99	251.25	58.48	10.57	5.70	1000.00
	F.,	11,815	669.41	254.49	57.12	14.24	4.75	1000.00
	M.,	9,491	690.57	122.25	57.95	25.38	16.18	912.33
Convulsions	F.,	8,353	635.68	120.00	61.62	33.87	15.98	867.15
	M.,	9,753	380.68	173.90	140.70	103.60	75.95	874.82
Croup	F.,	8,213	354.40	171.28	153.71	106.26	77.98	863.61
	M.,	5,953	397.97	189.36	60.98	21.45	10.14	679.90
Diarrhœa	F.,	4,872	420.52	190.83	66.06	21.88	8.26	716.56
	M.,	7,213	260.21	228.40	166.03	43.56	23.64	661.84
Dysentery	F.,	6,414	240.89	202.88	103.71	35.51	21.59	604.57
	M.,	5,869	318.54	172.07	82.28	44.38	31.24	648.51
Inflam. of Brain	F.,	5,034	312.71	175.25	84.94	46.15	38.39	657.45
	M.,	3,980	267.44	208.26	125.91	68.75	41.80	712.16
Measles	F.,	4,092	230.64	193.63	117.40	63.73	41.91	647.30
	M.,	35,493	137.50	73.99	40.36	20.49	13.42	295.75
Pneumonia	F.,	27,590	146.54	81.83	44.24	23.38	15.53	311.53
	M.,	8,181	100.83	137.71	161.36	141.14	109.78	650.82
Scarlet Fever	F.,	8,207	73.36	123.78	145.51	130.74	116.21	589.60
	M.,	2,171	419.74	465.41	95.94	12.45	4.15	997.69
Teething	F.,	2,093	422.29	478.72	83.69	9.09	1.91	995.70
	M.,	5,133	539.57	230.51	102.36	47.27	26.76	937.49
Whooping-cough	F.,	5,931	498.56	224.26	118.43	57.10	32.44	930.90

In studying the diseases given in tables 2, 3 and 4, I shall divide them into three classes. The first class includes cholera infantum, convulsions, diarrhœa, dysentery and teething, diseases which cause more than 50 per cent. of the deaths which occur among children under 5 years of

age. Now, what facts can be ascertained concerning the causation of this class of diseases? We have the following:

1. These diseases are most prevalent among children artificially fed.

Prof. Bölkh reports the following table of 1,000 deaths in Berlin in 1885, of those under 1 year of age:

	Mother's milk.	Wet nurse.	Animal milk.	Milk Foods.
Legitimate	7.4	7.7	42.1	67.7
Illegitimate	11.0	.0	63.2	127.8
Total	7.6	7.1	45.8	74.8

2. These diseases are more prevalent in cities than in country places. In Prussia, during the years 1875–77, the average death-rate from these diseases among those under 1 year of age was for each 1,000, 111.1; in rural districts, 96.5; in cities, 139.7.

3. These diseases are more prevalent in summer than in winter. This statement is graphically illustrated in the following plates, and it is also demonstrated in table 5.

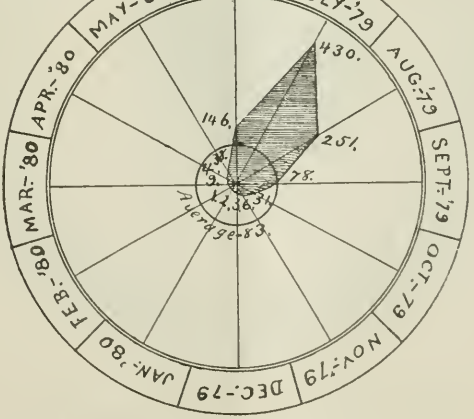
Recognizing the above facts, we must admit that the deaths from this class of diseases will be best restricted by attention to the food of children. Mother's milk is the best food for infants under 1 year, and the principal reason for its being the best is that when taken from the breast of the mother the milk is most likely to be free from germs. City children fare worse than those raised in the country, because when artificially fed the milk is not so fresh, and is likely to be infected with putrefactive microörganisms. These diseases are most prevalent in the summer, because putrefactive germs are more widely distributed at that season than at any other.

TABLE 5.—Exhibiting, by months, the number of (reported) deaths from each of eleven diseases in the United States during the two census years 1860 and 1870. Compiled from the U. S. Census Reports for those years.

Disease.	Jan.	Feb.	Mar.	Apr	May	June	July.	Aug	Sept.	Oct	Nov.	Dec
Cholera Infantum.	629	611	689	775	1,495	2,314	5,335	6,596	3,745	1,668	616	580
Convulsions	1,849	1,858	2,165	1,952	2,295	1,854	2,093	2,034	1,745	1,485	1,301	1,481
Croup	2,938	2,749	2,799	2,101	2,101	1,188	1,214	1,424	1,860	2,452	2,570	2,546
Diarrhœa	970	613	693	784	1,597	1,868	3,797	4,883	3,643	1,939	891	699
Dysentery	432	454	472	611	1,281	1,395	2,644	4,380	3,563	1,578	955	498
Inflam. of Brain	1,792	1,973	2,221	2,041	2,492	1,756	2,417	2,752	2,472	1,659	1,230	1,339
Measles	846	1,221	1,847	1,973	1,973	1,300	1,136	940	544	425	380	585
Pneumonia	8,991	9,737	10,852	8,797	6,360	3,911	2,611	2,534	2,418	2,515	4,050	5,855
Scarlet Fever	4,998	5,567	5,987	5,213	4,360	3,911	2,611	2,534	2,418	2,515	3,057	3,908
Teething	389	338	472	545	601	748	1,008	1,205	965	643	474	372
Whooping-cough	1,093	1,332	1,190	1,174	1,285	1,348	1,580	1,860	1,644	1,172	862	1,226
Av. temperature. *	36°	38°	45°	54°	66°	74°	78°	76°	69	56°	46°	38°

*At six stations in the United States for a series of years.

DEATHS FROM CHOLERA INFANTUM, BY MONTHS, IN 31 REGISTRATION CITIES IN THE U. S.



From Vol. XII, Tenth Census United States, Part 2.

A second class of diseases seriously affecting infantile mortality comprises diphtheria (reported in the United States census as croup), measles, scarlet fever and whooping-cough. These are universally regarded as contagious, and they are to be restricted by isolation and disinfection.

While I have no doubt that a microörganism is concerned in the production of pneumonia, I think that the weight of evidence at present is that exposure to marked changes in external temperature is an important, and probably a necessary factor in the causation of this disease. Deaths from pneumonia may be restricted by avoiding such exposure.

In concluding I may give the following answers to the questions asked in the beginning of this paper:

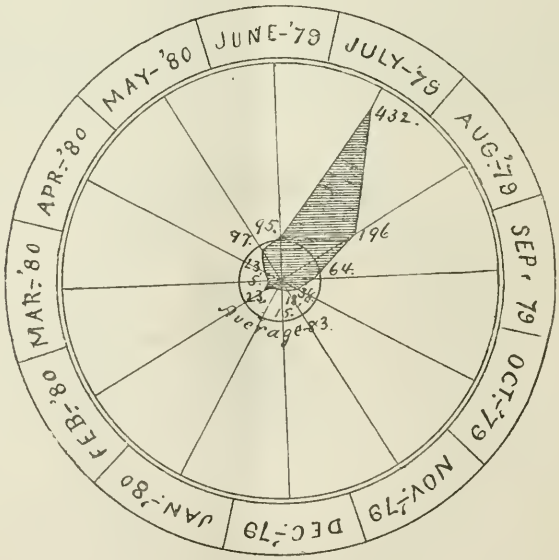
1. One-fourth of the children born in the United States die before they reach the end of the fifth year of life.

2. Derangements of digestion cause more than 50 per cent. of these deaths. This class of diseases may be restricted by proper attention to the food.

3. Infectious diseases are serious in their effects upon infantile mortality. They may be restricted by isolating the sick and disinfecting clothing and rooms.

4. About three-eighths of the total deaths from pneumonia occur among those under 5 years of age. Proper clothing and lessened exposure to extremes of temperature will do much to protect against this disease.

DEATHS FROM CHOLERA MORBUS, BY MONTHS, IN 31 REGISTRATION CITIES IN THE U. S.

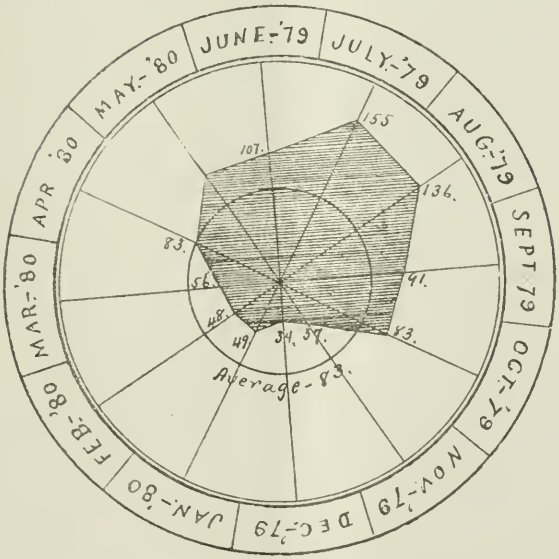


From Vol. XII, Tenth Census United States, Part 2.

DEATHS FROM DIARRHŒA AND DYSENTERY, BY MONTHS, IN 31 REGISTRATION CITIES IN THE UNITED STATES.



DEATHS FROM DENTITION, BY MONTHS, IN 31 REGISTRATION CITIES IN THE UNITED STATES.



From Vol. XII, Tenth Census United States, Part 2.

FOOD IN THE TREATMENT OF PULMONARY CONSUMPTION

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY SOLOMON SOLIS-COHEN, A.M., M.D.,

OF PHILADELPHIA.

PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS, PHILADELPHIA POLYCLINIC, ETC.

Rational therapeutics must be based on sound pathology. As an element in such pathology we are justified in considering empirical results of certain plans of treatment, independently of the views which have led to the adoption of that treatment. The scope of this paper is therapeutic, but in order that the objective points of therapy may be clearly set forth, it is necessary briefly to allude to certain moot questions of pathology.

The term pulmonary consumption is used in preference to the term tuberculosis, because the prevailing opinion of the day regards that pathological product called tubercle as the result of the vital activity of the microörganism known as the bacillus tuberculosis of Koch—while the therapeutic method to which attention is invited is not directed against that organism, its activity, or its products; but against the morbid process which permits it to obtain pabulum, and therefore to flourish, within the human body.

Without being hypercritical, it is still necessary to use terms accurately. If by tuberculosis we mean a disease whose natural history is but the history of the growth of a bacillus, and the consequences, direct and indirect, of that growth, then the feeding of patients affected with that disease can have no therapeutic influence upon the tuberculous process; but the feeding of patients affected with consumption has great therapeutic influence upon the consumptive process. It becomes necessary, then, in deference to the received opinion which substitutes bacteriology for morbid physiology, as the fundamental science of pathology, to emphasize the distinction forcibly drawn by Niemeyer when he declared that the great danger of phthisis was tuberculosis. In other words, that condition which is commonly alluded to by writers holding the current view, as a "predisposition," "want of immunity," "lack of resisting power," "presence of culture medium," etc., is, in this paper, regarded as the disease itself—the consumption, the phthisis—against which the efforts of the physician are to be directed; and the bacillary features—the tuberculosis if you will—are regarded as epiphenomena. This view finds support in the pregnant utterance of that philosophic thinker and keen observer, Benjamin Rush, the greatest of American physicians, who, in opposition to the crude pathology of his own day, declared "that the abscess, cough, tubercles, ulcers, and purulent or bloody discharges which occur in the pulmonary consumption are the effects and not the causes of the disease." I do not wish to be understood as subscribing to the pathology of Rush in all its details. In a century we learn something. If future research with better knowledge of physiological chemistry shall indubitably establish the claims now made as to the pathogenetic powers of microörganisms, and of alkaloidal products resulting from their activity, it will become necessary to revise a large portion of our nosology; and particularly in the disease, or rather in the morbid processes, now under consideration, will we have to recognize the existence of several distinct stages, each of which will require for clear understanding a distinctive name. By consumption, then, we mean, not a local disease resulting from the parasitic activity of a microörganism, but with Rush, "a disease of the whole system," an aberration of nutrition, the proximate cause of which is as yet undetermined; the remote causes being heredity, unhygienic life and surroundings, previous debilitating disease, and those influences in general to which we apply the term depressing; and in the pulmonary form of the disease to which attention will now be limited, we find as an additional etiological factor, partly remote, partly proximate (so far as local conditions are concerned), that special form of hygienic error which is expressed by the term improper breathing; whether we refer to the nature of respired substances or to the performance of the act of respiration.

Holding these views as to etiology and pathology, therapeusis becomes at once simplified. We can dismiss from consideration altogether the bacillus and its alkaloids, except as these may give rise to intercurrent symptoms which require special interference, determined by the special nature of the symptoms. The stern logic of experience has abundantly demonstrated, if not the folly, at least the inutility with our present resources, of attempts at specific microbicidal treatment; and the physiological or chemical antidotes to ptomaines can only be determined by the character of their toxic effects. Therefore, as already stated, symptomatic treatment can alone be employed.

But reflection makes evident, and universal experience confirms, that against the disease itself, against the consumption, the malnutrition general and local, direct measures may be employed. And the nature of the morbid process indicates at once the nature of the remedy.

The disease is one of malnutrition, of wasting. The remedy is nutrition, feeding. The result in any particular instance depends upon the extent to which the disease has progressed; the causes, proximate and remote, of the general and local morbid processes; and the degree in which the patient can be removed and protected from the continuous action of the causes. Therefore it is that heredity, from whose influence removal is

[1] An Inquiry into the Cause and Cure of the Pulmonary Consumption. Medical Inquiries and Observations, Phila., 1805, 2d edition. Vol. II, p. 82.

impossible and protection difficult, plays such an important part in increasing the mortality, by diminishing the powers of recovery. Nevertheless, even the dangers arising from heredity can to greater or less extent be overcome by judicious management, and life be saved or greatly prolonged.

We have spoken of the powers of recovery; and this is the keynote of treatment. Many consumptives get well under judicious treatment, and some in spite of injudicious treatment; but we cannot, in a strict use of words, speak of consumption as being cured. The physician helps his patients to recovery. By altering their environment, he puts them into favorable condition for the inherent powers of the organism to restore the equilibrium of vital action which constitutes health. But that is the highest triumph of the healing art. Nature herself becomes art's obedient servant.

In the judicious treatment of cases of pulmonary consumption medicines, so-called, have their appropriate place. Medicinal treatment, however, must be distinctly secondary and tributary to hygienic treatment; and the most important item of hygienic treatment is diet.

Diet in this connection is of two kinds, alimentary and respiratory. Air is food, equally with meat and drink. One is not less important than the other. Proper regulation of both is absolutely necessary. While it has long been recognized that nourishing food is of the greatest necessity in the management of cases of pulmonary consumption, within recent times the experience of Debove has most of all contributed to the proper appreciation of this fact by the profession. It is unnecessary to do more than allude to the reports of this observer upon the value of overfeeding by means of the stomach-tube, for these reports have been abundantly confirmed by subsequent experience of competent observers in all countries.

The great value of Debove's demonstrations, moreover, consists not so much in the method of alimentation employed—for resort to the stomach tube may be reserved for special cases—but in the fact they prominently brought forth, that consumptives, despite loss of appetite, retain good powers of digestion and of assimilation for certain kinds of food; that, indeed, they are able to dispose of a quantity far in excess of the needs of healthy persons; and that by means of this excessive quantity, this superalimentation, not only can present waste be checked, but past waste be repaired. Debove, too, indicated the most serviceable articles of food, namely: beef-powder, eggs and milk; in other words, a highly concentrated nitrogenous dietary.

The results of experience in treatment are surely as fully worthy of confidence as the results of experience in the physiological or pathological laboratory. These results seem to justify the opinion that as in diabetes—a wasting disease whose frequent termination in phthisis justifies the suspicion of a strong kinship between them—there is imperfect metabolism of carbohydrates; so in consumption, there is imperfect metabolism of the same class of food stuffs.

The problems of metabolism in nutrition, are not yet sufficiently clear of solution, to venture any explanation, either of the cause or the exact mechanism, of this failure; but by putting in this form the statement of experience that consumptives, like diabetics, do best on a nitrogenous dietary, we are enabled to make the fact more prominent. Experience also shows that beef is the best form of nitrogenous aliment in these cases. A group of practitioners in New York have had considerable success by restricting their patients to an exclusive diet of beef, combined with copious potations of hot water. This plan, I can personally testify from examination of patients thus treated, does yield excellent results; but I have obtained equally good results in my own practice with a more varied dietary; of which, however, beef forms the principal item. It should be tender and juicy, and the removal of fibrous parts is an advantage. It may be broiled or roasted, but should always be done rare. It may be finely chopped, moulded into little patties and broiled just sufficiently to brown the outside, then seasoned with salt, pepper, thyme, parsley, etc., to taste. It may be eaten raw if desired, and if no apprehension of tænia be entertained; but there is no advantage in raw beef over rare broiled steak or rare roast. Beef should be eaten at least twice, and if possible, three times, a day. When there is danger of the patient tiring of it, mutton, fowl, sweetbreads, eggs, fish or game may be occasionally substituted. Milk should also form an important portion of the dietary. The effort should be made in the majority of cases to have at least a quart and a pint of milk and a pint of cream taken during each twenty-four hours. Kumyss, or some of the other fermented preparations of milk, are often highly useful. Soups, and broths of all kinds, not likely to cause indigestion, and not containing any of the prohibited vegetables, may also be partaken of. The leguminous vegetables, peas, beans and lentils, as well as lettuce, cresses, spinach, and the other green vegetables, which contain those alkaline salts of organic acids so highly necessary to the proper constitution of the blood, should be freely eaten; but potatoes, turnips, beets, and the starchy and sugary vegetables generally, should be avoided, or cut down to the lowest limit. Bread should be reduced to a minimum, and gluten bread or that made from the whole wheat, substituted for the ordinary white bread. Pastries, sweets, and in general, those articles of diet which are indigestible or digestible only with difficulty, must be prohibited.

Although in consumption, as in diabetes and gout, the carbohydrates are not properly assimilated, yet other forms of hydrocarbonaceous food are not only harmless, but are absolutely required. The hydrocarbonaceous residue, which, as Pavy has shown, remains after urea has been separated from the proteids, furnishes this in part. In addition, fats in the form of oil dressing for salads, mutton-fat, beef-fat, and, above all, butter, should be eaten in rather large quantities. The cream already spoken of will also furnish a certain amount of fat. Cod liver oil and oleaginous inunctions may be resorted to when necessary. Alcohol also plays the part of a food, as well as that of a medicine, in this affection, more especially in febrile cases. It is best given with some other food, as milk, cream, eggs, or cod liver oil. In some cases, for prudential reasons, it may be disguised as malt extract, or made into a prescription with glycerine, as advised by Jaccoud. Water should be taken freely, and hot water, a pint or so, an hour before each meal, does certainly help to prepare the mucous membrane of the alimentary canal for the reception and proper disposition of food, as well as assist in passing off through the kidneys the greater amount of certain of the waste products of metabolism consequent upon the character of the diet.

The frequency of taking food should not be left to the whims or discretion of the patient. Everything should be accurately prescribed, not only as to quality and quantity of food, but also as to the exact times of eating. Individualization, in special character of food, and in special time of meals, is as necessary, as individualization in selection and dosage of drugs. Here, however, we can only speak in general terms. Rarely more than three hours, never more than four hours, except during sleep, should elapse between the times of taking food, and not only should a glass of milk, cream, or milk punch be taken just before going to bed, but there should be something of the kind, or perhaps a glass of wine or spirits, with some suitable meat preparation, like liquid peptonoids, by the bedside within easy reach of the patient, in case of waking during the night or early morning

When digestion seems to be impaired, or when a sufficient quantity of ordinary food cannot be taken, or when for any reason it is desired to save for other purposes part of the energy that would be required for digestion, predigested foods may be employed.

The milk used by the patient may be partially peptonized, or the alkaline pancreatic preparation simply be added to it at the moment of drinking, the peptonization being thus artificially effected within the alimentary canal. Peptonized beef tea, a preparation which, unlike ordinary beef tea, is a true food, may be prepared at home, or some of the excellent preparations of predigested beef which are now on sale at the shops, may be obtained. Of these preparations I have derived most satisfaction from the use of Reed & Carnrick's beef peptonoids, of which from one ounce to four or five ounces daily is given, according to indications. It may be made into a paste and spread upon bread, or added to hot water, soup, hot milk, or milk and alcohol. I prefer the latter methods.

We may thus outline an ordinary routine, susceptible of modification with the season and according to individual taste or circumstances. The patient should drink a pint of hot water on awakening in the morning and a little later take a glass of milk punch with a tablespoonful of beef peptonoids. An hour or so after this, follows breakfast; consisting of rare broiled beefsteak, mutton chops, broiled fish, or eggs boiled or poached, with coffee or chocolate if desired, milk, sliced tomatoes or other seasonable vegetable, a moderate amount of bread, with a great deal of butter. If much desired, a dish of gruel or porridge, preferably cracked wheat, may be allowed. Two or three hours later, kumyss, or soup, or broth strengthened with beef peptonoids, milk, butter and bread, celery and a salad of greens, follow. At one or two o'clock a substantial dinner is eaten, of which bouillon, with or without beef peptonoids, is the first item, and rare roast beef the principal dish; the meal consisting in addition, of the allowable vegetables, especially the greens; and when possible a glass of burgundy or other generous red wine or good wine of coca, or even a glass or two of beer, is drunk during the meal. Fruits are the only permissible dessert. Dinner should, in many cases, be preceded by the drinking of hot water, half a pint to a pint, half an hour to an hour before eating. Hot lemonade is sometimes more agreeable. At three or four o'clock comes kumyss, or cream, or milk punch with peptonoids, or malt extract; at six or seven, supper of a character similar to the breakfast; at nine, or at latest ten o'clock, bed time, the patient drinks cream with coca, coca wine, or milk and liquid peptonoids, with or without coca; while coca wine, or milk, or cream, with or without alcohol and peptonoids, is placed within easy reach for use on waking during the night. Cold water may be taken at suitable intervals between meals, never with meals.

While the digestive apparatus is not to be burdened beyond its capacity, the object is distinctly cramming—over-feeding—and when it cannot be properly carried out in some such manner as this the tube of Debove should be used without hesitation. For artificial feeding, peptonized milk, with beef powders, leguminous powders, predigested cereal preparations, or raw eggs, should be employed. Alcohol and the digestive ferments may also be added, when indicated. About

a quart should be introduced into the stomach at each feeding, and not less than two feedings a day be practiced. The patient may also be allowed to eat, or to drink nutritious liquids, in the intervals. When gavage is practiced, it is well to precede it by lavage with alkaline solutions, to which a little chloroform water has been added.

In order to enable the patient to digest and to assimilate this excessive amount of aliment, not only must the alimentary canal and its adnexa, immediate and remote, be put and kept in good condition, but a proper supply of air must be afforded. This we have spoken of as the "respiratory diet." Arbuthnot's characterization of respiration as the "second digestion," cannot be too often quoted. In a few cases of comparatively early date, the institution of appropriate voluntary muscular exercise, both indoors and out of doors, will accomplish all that is necessary in this direction. Sydenham asserted that a journey on horseback is an infallible cure for consumption, and Rush endorses the statement, adding instances also of the well known good effects of out-door life, in military camps, among lumbermen and charcoal burners, on hunting expeditions, etc. But patients who can be advised to undertake these journeys must retain a certain amount of vigor and must be so circumstanced that they can afford to follow the advice. In the vast majority of cases, either on account of the patient's muscular weakness, or of domestic and business ties, precluding absence in camp or on journeys, artificial aids to respiration must be employed at home. The best of these is the inhalation of compressed air after the method of Waldenburg. For use in the physician's office the apparatus of Waldenburg still holds its own, as a convenient and efficient instrument. In order to obtain the greatest benefit possible, however, it is necessary to enable the patient to carry out the treatment in his own home, for bad weather and a score of other causes may interfere with his regular visits to his medical attendant. If I venture to recommend for this purpose instruments of my own device, it is because these are the only available apparatus of which I have knowledge. They are not and will not be patented.

There are two forms of apparatus, applicable to two different classes of patients. First, the combination of a bellows with a small gasometer, or of a doubly acting bellows with a pair of gasometers, made by Metzger, of Philadelphia, and known as the Cohen-Richardson apparatus; and, Second, the little pocket apparatus made for me by Codman & Shurtleff, under the name of the Pneumatic Resistance Valves.

The first of these instruments, described in the *New York Medical Journal*, October 18, 1884, has been in use for more than six years and, with some improvements suggested by experience, has given complete satisfaction. It is simply a cheap and convenient method for administering inhalations of compressed air, or such inhalations combined with expiration into rarefied air.

The second, for use primarily with stronger patients, or secondarily to keep up the good effects obtained by the first method after cessation of active treatment, was described in the *New York Medical Journal* December 6, 1887, and is here exhibited. By interposing into the current of respired air a measured impediment (namely, an ebonite valve controlled by a spiral spring, the tension of which may be regulated by a screw) we are able to offer a definite, regulated resistance either to expiration or inspiration, or to both, as may be desired. We thus obtain the physiological and therapeutical effects of inhalation of rarefied air or of exhalation into compressed air; and the instrument is applicable in all cases where these particular therapeutical expedients are indicated. By combining with a compressed air apparatus an expiration resistance valve, we are enabled to get the effects of continuous respiration of compressed air in the rare cases that this method is of benefit. I have not, however, found either the latter, or expiration into rarefied air, of greater benefit in the dietetic treatment of consumption than the simple inhalation of compressed air, to the very great benefits of which, after this necessary instrumental digression, I now desire to call attention.

The mechanical-physiological principles involved, have been elsewhere fully discussed and need not here detain us. The fundamental law of physics that motion takes place in the direction of least resistance, explains them all. The physiological-therapeutical effects are partly local, partly general. Locally the effects are:

First, restoration of proper expansion of the lungs, whether deficient expansion has resulted simply from debility of the muscular apparatus or loss of tone in the elastic parenchyma, or whether, in addition to these factors, there has been occlusion of bronchioles and alveoli by certain products of congestion and inflammation, still remediable and removable, such as engorgement of vessels, effusion, accumulation of products of abnormal secretion and catarrhal desquamation, and even new formed congeries of immature cells.

Secondly, by reason of increased expansion, a greater amount of air containing necessary oxygen enters the lungs and comes in contact with a greater extent of blood surface, and this under a moderate pressure which, to some extent, facilitates both gaseous exchange and combination of hæmoglobin with oxygen.

Thirdly, by pressure effects upon the heart and vessels, both the volume and activity of intrapulmonary circulation are increased, resulting in

the exposure of a still greater number of corpuscles to the increased volume of oxygen, and in increased nutrition of the pulmonary tissues; and, from similar effects upon peripheral circulation, the ultimate penetration of blood into all the tissues, with tissue respiration, is stimulated and increased. If we add to these demonstrated effects what is theoretically probable, that the production and absorption of lymph and chyle, and the functional activity of the abdominal viscera in general, are increased by the pressure exerted upon them by the diaphragm, we can see what a powerful stimulus, alike to general nutrition and to its individual processes, is afforded by this simple expedient.

Fourthly, pulmonary ventilation is increased. That is to say, not only is a greater amount of oxygen inhaled and absorbed, and a greater amount of carbonic acid given up and exhaled, with each act of respiration; not only does the vivifying current of inspired air finally penetrate into all the disused and clogged recesses; but the foul materials which accumulate in such disused areas are reached and expelled; thus cleansing and purifying the respiratory surfaces and averting the dangers of auto-intoxication from absorption of the products of putrefaction; and also tending to prevent whatever further dangers may be liable to arise from the cultivation upon these products of the bacillus of Koch.

This applies not only to gaseous, but to what may be called circulatory ventilation, and its benefits, especially in the apices in early cases, cannot be overestimated.

Fifthly, the depth and regularity of the respiratory act; the exercise to the muscles of respiration thus afforded; together with the stimulus to and regulation of the action of heart and vessels; produce a general tonic effect upon the nervous and muscular apparatus of respiration and of circulation, and institute an improved habit in the performance of these functions, which tends to maintain and increase all collateral benefits.

Through these local effects, and the general effects already alluded to as obviously resulting, we are enabled to apply with greater efficiency, the measures designed especially to improve general nutrition. For not only do we get rid of a portion of the depressing influences which are factors in the production and maintenance of the disease, but we are enabled to overfeed our patient with a certainty that the food given will be utilized, and that the waste products will be largely burned off, without giving rise to irritating or toxic products of imperfect oxidation. In other words, we stimulate all the processes of metabolism, both constructive and destructive, from the digestive canal onwards, and thus directly improve both organic harmony and cellular nutrition. In addition, we are able, when this measure is indicated, to administer blood-improving remedies, such as iron and arsenic, in greater quantities and with better effect.

It is unnecessary to detail the history of cases treated upon the principle of improving nutrition by proper alimentary and respiratory food, supplemented and aided, of course, by such other treatment, medicinal and hygienic, as general principles and individual conditions may indicate. It does not revive the dead, it does not restore lost tissues; but in no case has it failed to secure to the patient greater comfort and more or less prolongation of life; in early cases it has secured perfect recovery, and even in a few far advanced cases has put the patients into such good nutrition, despite the presence of large pulmonary cavities, that they, if not their physician, have for some years considered that cure was effected. One such case, of recent date, being fresh in memory, I may quote as an illustration: that of a lady aged 28, whose brother and sister had died of pulmonary consumption, whose father and mother had both lost numerous relatives by the same disease. When she came under observation, in September last, she had been sick for two years. There was great consolidation of the upper portion of the right lung, with a large, moist cavity in the middle; and there was some consolidation of the upper half of the upper lobe of the left lung, with an area of softening apparently the size of a silver dollar detectible posteriorly. Cough was troublesome, the sputum being nummular. Indigestion was apparently pronounced. There was an afternoon temperature of 101.5°. The patient was feeble. Her weight was 107 pounds.

Last month she returned to her home weighing 136½ pounds, without fever or cough, with perfect digestion, and feeling strong and vigorous. The cavity in the right lung remains, but is dry. There is no evidence discernible of softening in the left lung. The area of condensation is diminished, leaving on the left about three fingers' breadth of moderate dulness, and on the right about five fingers' breadth of marked dulness, interspersed with some small scattered areas of resonance. I do not look upon this as a complete recovery, but it gives a prospect of years of comfortable life, at home, and not in expatriation, to one who had been told by an eminent authority some months previous to my first acquaintance with her, that her case offered but little hope of improvement.

Since coming to Newport I have received a letter from this patient, stating that in the last month she has gained six pounds additional. She continues to follow the diet advised and to use the compressed air apparatus.

If I may repeat words I have elsewhere used, let me earnestly affirm, in conclusion, that as the ancient orator declared the three essentials of eloquence to be "action, action, and action," so

may the therapeutist of to-day declare the three essentials of the treatment of consumption to be —not microbicide, but—NUTRITION, NUTRITION, and NUTRITION.

EPICYSTIC SURGICAL FISTULA, FOR THE RELIEF OF VESICAL CATARRH.

Read by Title in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN D. S. DAVIS, M.D.,
OF BIRMINGHAM, ALA.

The treatment of vesical catarrh by suprapubic drainage, irrespective of the causes producing the disease, is not only the most rational, theoretically, but the most available and successful. Such has been the palliative, restorative and curative effect of suprapubic drainage in cases of suppurative cystitis that I have treated by this method, that I have repeatedly resorted to it, with the happiest results.

A close observation of my cases, though at first giving me much anxiety and apprehension, taught me the valued lesson of suprapubic drainage in cystitis. The epicystic fistula gives a desirable continuous drainage, I have not been able to get by any other method. The fistula possesses the ability, through the recti muscles, and a possible pseudo-sphincter, to control the urine at all times. The pseudo-sphincter muscle is formed, no doubt, by the fibres of the detrusor urinæ.

I have tried drainage of the bladder by perineal incision, in the treatment of vesical catarrh; but in no instance did I get such results as in the cases treated by a direct opening into the bladder above the pubis.

September, 1888, I was called by a physician friend, Dr. J. C. Dozier, to see a patient with him. The man, Mr. B., had retention of urine from an impassable stricture of the urethra and enlarged prostate gland. I aspirated his bladder of 2½ pints of alkaline urine, containing pus and mucus. The patient was able to pass a very small stream of urine the next day and would not be operated on for the relief of the stricture. Three months later I was called to see him, and found him suffering from extravasation of urine into the scrotum as the result of an unsuccessful attempt to draw his urine the day previous. The contusion, puncture, etc., resulted in an extensive extravasation into the scrotum, perineum, and above the pubis. I found him with a severe chill, temperature 106°, and pulse 140. I feared extravasation into the peritoneal cavity, and suggested to the family the possibility of having to open the peritoneal cavity at once. I, however, resorted to draining the bladder above the pubis. Seven days after the suprapubic puncture I performed internal urethrotomy for relief of penile stricture, and began the treatment of the enlarged prostate by electrolysis. The bladder was irrigated with hot water twice daily for ten days. Electrolysis was used on prostate every third day for ten times, when it was discontinued. The fistula was kept open for thirty days, when it was allowed to close by its own continuity and repair. This was accomplished in about ten days. The man is entirely well and at his business.

Mr. A., æt. 57 years, had been suffering from vesical inflammation for six months. For several weeks before he consulted me he passed his water with much pain. He had rigors and exhaustive night sweats. His temperature would go up for two or three days at a time, and would be followed by two or three consecutive days of only slightly elevated temperature. He had frequent lumbar pains shooting toward the bladder and hip, retraction of right testicle, and tenderness on pressure over the right kidney. Had frequent desire to urinate, with inability to pass his urine. Urethra competent. Prostate gland was slightly enlarged. Urine contained pus and mucus. Average daily amount of urine 39 ozs. After the washing out of the bladder pus would soon accumulate in the viscus, which was conclusive to my mind that pyelitis was causing the progressive emaciation and hectic fever.

Operated for the formation of the direct epicystic fistula for draining bladder and kidney. Bladder was washed out twice daily. Fever subsided on the second day. Patient is entirely relieved from pain; fistula well formed. He returned to his home on the thirtieth day. I hear from him, however, every second day, and he is improving all the time. If the pyelitis had been due to stone in the kidney it would not have disappeared so early. And, too, in such a case the fistula would offer but temporary relief to the bladder only. I am sure he will experience relief so long as he keeps the fistula open and washes out his bladder. By the use of my *epicystic fistula plug*[1] he will have no trouble in keeping the fistula competent. It is possible that he may in one or two years be able to let the fistula close in safety. It should not be allowed to close until every symptom of the disease has disappeared for many months. Specific gravity of urine June 5, 1889 (forty-nine days after operation), 1020, no mucus and no pus.

I was captivated by the enthusiastic reports of Dr. Hunter McGuire,[2] on his coffee-spout fistula for prostatic hypertrophy, and did epicystotomy for the formation of his coffee-spout fistula. Two cases have been reported,[3] with no better results

[1] The author's *epicystic fistula plug* is made to fill the fistula within one-third of an inch of viscus. The plug (which was first suggested to the author by his brother, Dr. W. E. B. Davis), is made of silver or vulcanized rubber and provided with a slight shoulder one-fourth of an inch from concavo-convex flange, which is grasped by the skin and held in position. Without the shoulder the recti muscles throw the plug out and prevent its retention.

[2] Virginia Med. Monthly, October, 1888, pp. 445-456.

[3] Virginia Med. Monthly, April, 1889, pp. 1-5; Alabama Med. and Surg. Age, April, 1889, pp. 192-198; New York Med. Journal, April 13, 1889, pp. 416, 417.

than have attended the direct suprapubic fistula. I adopted the coffee-spout fistula with the view of practicing it, but I am so thoroughly convinced that it does not possess the advantages attending the direct fistula, that I do not think I will ever resort to it again.

In prostatic hypertrophy, where there is much distension of the bladder, due to retention of urine, and the bladder is prominent above the pubes, a sufficient opening can be made, by a single plunge of a large trocar or knife, for cystoscopic exploration and the formation of the fistula for intra-vesical treatment and drainage. If nothing more than drainage is necessary, the dread and shock of a technical epicystotomy (by a long incision) may be avoided, by giving the patient the benefit of a fistula in the manner suggested. I have resorted to this measure in cases of very old and feeble men, where I could not administer an anæsthetic, with immediate relief to the patient. In conditions of the bladder where, by reason of a long-standing inflammation of the bladder, the viscus becomes contracted, it is necessary to make an incision through the integument, superficial fascia, muscles and transversalis fascia, sufficiently large to allow the bladder to be opened for intra-vesical ocular exploration and operation.

The technique of the operation for the formation of the epicystic fistula, described in my recent paper[1] before the State Medical Association of Alabama, and published in many of the leading journals of this country, was the result of my enthusiasm over the coffee-spout fistula. My experience with the formation of the direct and coffee-spout fistulæ has taught me that the former is always practicable, as it can be quickly made in cases where an anæsthetic cannot be given with safety, and possesses every advantage attributed to the coffee-spout fistula, and is superior to it in the power to retain and expel the urine, by reason of a better power exerted through the recti muscles near the symphysis.

Hence I consider it necessary to retrace my steps for the better consideration of the direct epicystic fistula, which I have formed for exploration, intra-vesical treatment and drainage, and reconsider it under the following heads:

I. Definition of epicystic surgical fistula.

II. Surgical resources in the formation of the epicystic surgical fistula.

1. Preparation for the operation.
2. Anæsthesia.
3. Position.
4. Incision and opening bladder.
5. Intra-vesical exploration and treatment.
6. Toilet and after-treatment.

III. Advantages of the epicystic surgical fistula.

1. Cystoscopic exploration.
2. Intra-vesical treatment.
3. Drainage.

1. *Definition of Epicystic Surgical Fistula.*—Epicystic surgical fistula is the title here given to a suprapubic fistula into the bladder, created by the surgeon for exploration, intra-vesical treatment and drainage. A fistula which, acting as an artificial urethra, is capable of giving free access to the inside of the bladder for cystoscopic exploration, to provide a ready, convenient and comfortable means of emptying the bladder at will; gives the surgeon a competent opening into the viscus for exploration of ureters; intra-vesical applications; drainage in pyelitis and in pyelonephritis.

It constitutes an essential element in the speedy and complete evacuation of the contents of the bladder in all epicystic operations, and imitates nature in the restoratton of its own continuity and repair as the pathological changes within the bladder subside.

II. Surgical resources in the formation of the epicystic surgical fistula.

1. *Preparation for the Operation.*—All hair is to be shaved from the pubes, and all the details of antiseptic surgery are to be carried out so far as cleaning the pubes and abdomen.

Except in those cases of hypertrophy of the prostate gland; paresis and atony; neurosis of the bladder, and in all forms of bladder inflammation accompanied with distension of the bladder into prominence above the symphysis, where immediate epicystotomy, by puncture with a trocar or knife, is necessary, two assistants, though not necessary, may be of valuable aid.

A temperature of 80° or 85° F. should be maintained in the operating-room from the beginning to the end of the operation. The bladder is emptied and thoroughly washed with warm water. When the water returns clean, the bladder is slowly distended with warm sterilized water, thrown in by means of a fountain syringe, with nozzle in urethra—with a degree of pressure sufficient to distend the bladder to its utmost capacity—which can never be too great for the resistance of the bladder. It is better to fail in filling the bladder than to distend the bladder beyond the limit of competency. Indeed, it is not necessary to fill the bladder to any degree of resistance. I have operated when the bladder was in an irritable condition and would not tolerate distension greater than the capacity of 2 ozs., and had no difficulty in avoiding the pre-vesical fold of peritoneum or finding the bladder. The water is secured in the bladder by tying the penis at the base with a rubber tube.

[1] "Epicystic Surgical Fistula for Cystoscopic Exploration, Intra-vesical Treatment and Drainage," by John D. S. Davis, M.D., April, 1889. Transactions of the State Med. Assoc. of Alabama, 1889; St. Louis Med. Review, May 4 and 18, 1889; THE JOURNAL OF THE AM. MED. ASSOC., May 18, 1889, pp. 685-703; Ala. Med. and Surg. Age, May, 1889, pp. 247-256; Virginia Med. Monthly, May, 1889, pp. 147, 148; Atlanta Med. and Surg. Jour., June, 1889, pp. 204-212; The Amer. Prac and News, May 11, 1889, pp. 294-298; Times and Register, May 11, 1889, pp. 27-29; Cincinnati Med. News, April, 1889, pp. 217-224; N. Y. Med. Times June, 1889, pp. 87, 88.

A colpeurynter is next to be well oiled and inserted into the rectum—the rectum having been previously emptied by enema—and filled with warm water. This distension brings the bladder into view above the pubis.

2. *Anæsthesia.*—My preference for chloroform is the result of personal experience with it. It is not free from objection, as its depressing effect on the heart is well known. The operation usually occupies from five to ten minutes; and hence its prolonged use would be unnecessary and uncalled for. The objections to ether are the suppression of the excretions, and the frequency with which bronchitis is produced when administered to persons advanced in years. The best course to pursue, when the operation is prolonged, is to follow the use of chloroform by ether.

In old men where there is much distension from retention of urine, due to hypertrophy of prostate, to avoid the dangers of an anæsthetic, I make the fistula by one plunge with a large trocar or with a knife, the shock never being noticeable.

If the operation requires the administration of an anæsthetic, the patient must be kept profoundly under its influence from the first incision until the superficial wound is closed.

Position.—The patient is placed on the back on an ordinary operating table with the legs extended, as if in a position of perfect comfort and rest. Many surgeons claim advantages in the position recommended by Trendelenburg. Eigenbrodt emphasizes the fact[5] that the elevation of the pelvis in Trendelenburg's position[6] helps the surgeon to avoid the prevesical peritoneal fold at the time of the incision of the bladder.

It possesses no advantage over the ordinary flat-back position. With two openings in the bladder for a continuous stream of clear water, every part of the bladder may be illuminated with the electric surgical light, and thus the surgeon is enabled to examine the entire intra-vesical wall. Undoubtedly the position recommended by Trendelenburg possesses advantages which to the author, more than to myself, make it highly ideal. As for myself, I prefer and recommend the flat-back position.

4. *Incision and opening Bladder.*—I have three methods for making the incision, viz.:

a. When the distension is great and no intra-vesical operation necessary, the opening is made with a trocar, withdrawing the stylet and replacing it with a rubber catheter, after the introduction of which the canula is withdrawn, leaving the catheter in the bladder. It is necessary, sometimes, to enlarge the external or cutaneous opening to prevent a closure of the catheter by compression and to reuder the external opening sufficiently large.

[5] L. c., p. 72. Cf. Lang, Med News, December 4, 1886.

[6] In Trendelenburg's position the patient's legs are held over the shoulders of an assistant with the body resting on an incline table, much in the position in which hogs are hung for spaying.

b. The bladder may be opened, when distended, by a direct incision with the knife, in the median line, with cutting edge towards the symphysis pubes. The knife is withdrawn and a catheter is introduced, through the wound, into the bladder.

c. A perpendicular incision, 1 or 2 inches, is made in the median line above the symphysis pubes. The recti muscles are separated to symphysis. If the pyramidalis muscles are in the way, the fibres should be cut. The transversalis fascia is divided on a grooved director from symphysis to upper margin of superficial wound. Instead of following Guyon's manœuvre, I catch the bladder with a tenaculum on a line with the symphysis, through the prevesical fat, and cut through with a bladder knife into the bladder with one smooth, clean incision, to prevent undue disturbance of the cellulo-adipose tissue between the bladder and pubes, and avoid infiltration. I have never seen a case where it was necessary to put up the prevesical fat, and with it the peritoneal cul-de-sac. If the bladder is caught on a line with the symphysis and cut downwards, no fears need be had for the peritoneum. Cutting this prevesical fat prevents its after dropping down over the opening into the bladder, and acting as a valve to prevent easy escape of urine and causing infiltration. And, too, such a procedure gives a smooth incision throughout, and it is almost impossible to have infiltration, even when no drainage tube is left in the bladder, and the urine is left to flow out through the fistulous track and taken up by a layer of absorbent cotton. In making the incision into the bladder, little attention is to be paid to any vein or veins which are sometimes met with. If cut, they will stop bleeding when the bladder is dropped back and the rectal bag removed. The operation is usually bloodless in the sense of hæmorrhage. I have operated without the patient losing more than 1 drachm of blood.

5. *Intra-vesical Exploration and Treatment.*—With the provisions of the puncture or incision the bladder can be examined with the cystoscope and surgeon's light. If tumors be found, if practicable they should be removed; villous growths and any foreign body found should be removed. If nothing is found in the bladder, the fistula, in the absence of malignancy, will be all that is required to remove the cystitis.

Under the provision of the last incision, the finger is carried into the bladder and a thorough search made for any tumors, villous growths, or foreign bodies which should be removed. The rubber around the penis is now untied and the bladder emptied and washed out with hot sterilized water.

6. *Toilette and After Treatment.*—Under the provisions of the last method of making the incision, the bladder is now allowed to drop back into the pelvis, and the superficial wound so

closed by two or more sutures (including the skin and superficial fascia only), in the upper portion of the incision, as to leave a fistulous track of equal size from the bladder to lower portion of the superficial incision.

A large rubber catheter is now to be introduced into the bladder through the opening, and its distal extremity allowed to enter a urinal placed in the bed between the patient's thighs, or preferably at the patient's side. Prof. F. Trendelenburg, director of the surgical clinic of the University of Bonn, proposed, for draining the bladder in supra-pubic lithotomy, the T tube in latero-abdominal position and open wound treatment as the simplest, safest and best. He makes an antiseptic dressing of iodoform gauze around the T tube. There can be no real necessity for a tube of any kind to be introduced into the bladder for the purpose of conveying the urine from the bladder to prevent infiltration, except in the puncture operation, when it is necessary to let the catheter or canula remain in for a period of six or eight hours, for the formation of the fistula. The smallness of the fistula might be a cause for extravasation, though quite improbable. To prevent irritation of the skin, the urine is kept acid by the administration of citric acid or some other more palatable acid drink. No better antiseptic than the acid urine can be secured for the constant bath of the parts. It should be allowed to flow out through the wound and absorbed by a pad of absorbent cotton placed loosely over the wound, and removed as often as soiled by the outflowing urine. By this method of emptying the bladder, no possible small amount of urine can be impeded in its outflow, which is the case around and outside of the tube when catheter or tube is left in for any length of time—a source of no little annoyance at times. This little collected or retained urine, around the outside of the tube alone, I have seen produce a hard chill and elevation of temperature, and become for the time an immediate, alarming and aggravative source of trouble. I never have seen the skin made sore or chafed by the outflowing urine in epicystotomy, or from its after escape through the surgical fistula.

The bladder should be washed out twice daily with hot sterilized water, by means of a fountain syringe, with its nozzle introduced into the urethra, the water escaping through the epicystic fistula and guided into a bed pan under the patient.

The superficial stitches are taken out at the end of one week, and intermittent catheterization by the fistula is then resorted to, for the sole purpose of training the fistula and to prevent its rapid closure. It is not necessary to catheterize for the purpose solely of drawing off the urine. In some cases I never drew the urine save for the purpose of analysis, but occasionally introduced a rubber bougie or fistula plug to prevent the closure of the fistula. The drainage by the fistula alone is admirable, and the fistula will be well formed in twenty or thirty days, competent to retain urine without dripping and to allow its escape in a good projecting stream at will. With no tearing of the tissues, and with a clean cut, the drainage is perfect and the dangers are *nil*.

III. Advantages of the epicystic surgical fistula.

1. *Cystoscopic Exploration.*—One of the great difficulties in the cystoscopic exploration of the bladder is the presence of pus, mucus and sometimes blood, which renders it exceedingly difficult to maintain a translucency of the fluid used to distend the bladder. By means of a simple fountain syringe a constant current of clear water may be kept within the bladder, so essential to a complete observation of the trigonum Lieutaudii, the most interesting part of the viscus, the ureters, and to examine any affection of that viscus. The fistula may be made for temporary purposes of cystoscopy. Diagnostic purposes are met by the possibility of immediate detection of all local conditions, such as tumors, calculi, foreign bodies, neoplasms, the collection of fluids from the ureters, etc.

2. *Intra-vesical Treatment.*—Having, by means of the epicystic exploration, revealed the true nature of the intra-vesical trouble, the treatment resolves itself into the immediate necessities of the case. For instance, prostatectomy may be necessary; villous papilloma may be found, and should be remedied; pedunculated growths may be found, which should be removed by the scissors, or Paquelin's cautery, etc. In such cases the opening in the bladder sufficient to introduce a finger, should be enlarged downwards under the symphysis pubes, and the operation indicated should at once be performed. The object of the formation of the permanent surgical fistula is to meet the after indications in such operations, the details of which do not properly come within the province of this discussion. However, it is sufficient to state, what is reasonable and practicable, that a better means by which the intra-vesical wall can be reached and treated therapeutically has not yet been devised.

3. *Drainage.*—Permanent after-drainage in all intra-vesical operations cannot be necessary, but it is highly essential to secure good and sufficient drainage until the paravascular tissue is disengorged, the cystitis is relieved and the urine becomes normal and passes per urethra unobstructed. And until this end is obtained, complete artificial arrangement for the escape of the contents of the viscus must be made. In such cases of prostatic hypertrophy or malignant growths, when removal of the obstruction is impossible or contraindicated, the epicystic surgical fistula is clearly indicated and essentially neces-

sary. It meets every possible indication for local treatment and gives the only controllable ready and free drainage to viscus and kidneys. Urinary back pressure, as the result of incompetency of the urethra from the various immovable prostatic troubles, is often an immediate and remote cause of surgical kidney, which can only be removed or relieved by supra-pubic drainage.

It is also indicated in conditions of the bladder of long standing cystitis, where capillary stasis attending the inflammatory process results in paresis. When the urethra is competent, the supra-pubic fistula affords the best means of washing out the bladder in chronic cystitis.

The operation has been performed when the urethra would admit a number 30 (A) sound, simply for the purpose of washing the bladder without the necessity of introducing a catheter twice a day, which causes great irritation in these cases. As stated, with the fistula it is only necessary to introduce the nozzle of a fountain syringe into the urethra, when the water will pass into the bladder and out at the fistula, without irritation to the prostate and bladder, and always with great relief to the patient. The bladder can be washed for hours at a time, when the patient is suffering, with complete relief from all pain.

SCARLET FEVER.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY C. R. EARLEY, M.D.,
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A genus of disease in the class Pyrexia, and order Exanthemata of Cullen. It is an eruptive fever particularly affecting the skin and mucous membranes of the mouth and fauces, and by a majority of writers on the subject is considered as a contagious disease. This I look upon as very doubtful, or at least it has not proved the fact to me in my practice for the last forty-four years. I have known one or more of the same family to have well marked cases of the disease, while others were entirely exempt, and while some families in the locality were every day exposed to it and escaped an attack, other families that prevented their members from going amongst it, when the disease prevailed, or having any communication with those that were sick of scarlet fever, were subject to the disease in all its forms.

The only case I ever saw in which contagion was suggested to my mind was that of a family of four, a man, his wife, and two daughters, residing on a farm about eighty miles north of our town. On the 13th day of January, 1869, he packed his household goods in a two-horse sled and moved for Earley, Elk County, Pa., arriving there on the evening of January 14, 1869. On their way, on the last day, his wife and oldest daughter were taken sick, and on their arriva that evening I was consulted and found them both very ill of scarlatina anginosa. They had moved their family and household goods into a house with a family residing in that town. A few days later his other and youngest daughter was attacked with the same form of disease, and a few days later three children of the family where they were staying were also attacked, two with the same form of scarlatina, and the third case was very severely seized with scarlatina maligna. I at once ordered all clothing and household goods removed to a large farm barn and placed on a scaffold over the threshing floor, consisting of round poles which admitted of free airing, and here every means was used to disinfect all goods and clothing. The house where they were staying was also disinfected, and the patients freely bathed and quicklime placed plentifully in every room. All the cases at once began to improve and were soon well, and not another case was produced in that place. There was no case in the old home from which they had come, before or after their removal. I of course placed this series of cases side by side with the reports of Dr. Rush and others on like cases of yellow fever.

The disease was produced in that family by the condition of the clothing and household goods, that had been stored away in an old, damp and unused room in the house they moved from, where they were shut up from air or light and were filled with mould and dust, and the whole mass of mould, dampness and other filth was packed into boxes and opened upon their arrival in Pennsylvania. Thus those that took them from the boxes in the room at the old home and packed them in the boxes were taken sick with scarlet fever, and all that assisted or looked over the unpacking of the same on their arrival in Elk County, Pa., were also seized with the same disease, and after all these goods were removed to the barn and thoroughly disinfected, not another case existed or was produced, and those that were sick at once recovered; thus showing the cause to be from the condition of the goods unpacked and brought with them and again unpacked without cleansing freely, airing and disinfecting.

In my entire practice I have never known any outbreak of scarlet fever to be produced by any other than local causes. In the country, where the epidemic breaks out in localities where there are no communications with the outside country, where no person has been from home and returned, and no one from other towns and localities has visited, we have in such cases, in my opinion, positive proof that the disease is produced by local causes, especially when, as has always been the case in my practice in the country and small towns and among farmers, lumber camps, mining towns, etc.; at elevations from 750 to 2,350 feet above

ocean level, many of the lumber camps being from three to ten miles from any other settlement or towns, the epidemic has been entirely wiped out on thoroughly cleansing, purifying and disinfecting all the surroundings of the house, clothing and all household goods, having all vegetables, fruits, wood, boxes, etc., removed from the cellars; the walls and floor above well whitewashed with good fresh lime and quicklime placed through the cellar and there left to air slack, and quicklime placed in every room and closet of the house and there left to air slack, and lime thrown in all low or moist places about the building outside; also the sulphate of iron in a solution of about 1 lb. to 4 gallons of water used freely in all water closets, sinks, sewers, etc., as a disinfectant.

Medical writers generally divide scarlet fever into four forms: scarlatina simplex, scarlatina sine exanthemata, scarlatina anginosa and scarlatina maligna. I shall, however, consider these all under one general head, as they appear to be different degrees of the same disease, varying in violence as they occur in different individuals, even simultaneously in the same family. I have frequently seen all the forms of this disease at the same time in the same family of several children, probably owing to some peculiar state of the system.

Symptoms.—Scarlet fever generally comes on with the ordinary preliminary of languor, weariness, rigor and pains in the back and limbs. The fever sets in with a frequent pulse, hot, dry skin, flushed face, furred tongue, anorexia, thirst and muscular prostration.

Sometimes there are nausea and vomiting; sometimes headache or other symptoms of disorder of the nervous system, such as restlessness, delirium, stupor, coma or convulsions; sometimes the patient may appear as well as usual one moment, and the next be seized with vomiting with all the symptoms of the primary attack of the disease in the most aggravated form. In fact, the symptoms of this fever are found of every possible grade from the mildest form, scarcely amounting to disease, up to the highest point of violence and danger. Sometimes at the very first and sometimes at a later period, there is more or less irritation or inflammation of the fauces, which have a red appearance and are frequently swollen.

The tongue is coated with a white or yellowish white fur and bright or scarlet red papillæ appear through the surface or coating of the furred tongue, and it is red at the tip and edges (not so in diphtheria). Upon the second, third or fourth day in most cases a rash makes its appearance; sometimes earlier and sometimes later, and not unfrequently there is no rash at all. In such cases we call it scarlatina sine exanthemata. We frequently find the disease in the latter form in families where other members pass regularly through the disease with rash, etc. The rash appears usually first upon the neck, face and breast; then it gradually spreads over the trunk and extremities, but greater diversity exists in different cases in the amount and the arrangement of the eruption; it is sometimes scanty, presenting but a few points here and there, but more frequently it covers the whole body, varying in its color according to the grade of fever present. The eruption is sometimes rough, but generally smooth to the fingers.

The skin is often slightly swollen on the face, hands and feet. The fever continues through the whole course with various degrees of violence. The pulse is usually frequent. I have often seen it varying from 100 to 130 in a minute; it, however, seldom has much force. The skin is dry, very hot and burning.

The bowels are frequently constipated, and again there is more or less diarrhœa from the beginning, and frequently in the advanced stage. The affection of the throat is often slight, and again it becomes the most prominent dangerous symptom. The tonsil and soft palate or uvula are found to be swollen and of a deep red color, and patches of concrete exudations are frequently seen upon the tonsils at an early period. This condition of the throat, tonsils, etc., should in my opinion be treated as diphtheria. The patient can hardly swallow the food and drink, which is sometimes returned from the nostrils; sometimes the condition of the throat is such as to impede respiration more or less. There is always more or less swelling of the external parts in the region of the submaxillary and parotid glands. It appears to be seated more in the cellular tissue, or the lymphatic glands, than either the parotid or submaxillary. Frequently the mucous membrane of the nostrils is swollen so as to nearly close the nasal passage, and in advanced stages of the disease there is an offensive yellow liquid discharged from the nostrils. There is usually a discharge of mucus, etc., from the mouth and fauces, which in advanced cases becomes quite viscid.

The entire duration of the disease is various, terminating by desquamation taking place; sometimes on the fifth day, sometimes the ninth day, and frequently at a much later period.

Prognosis.—The prognosis in this fever is always uncertain. I have frequently known the mildest cases to assume a dangerously malignant character and the patient die very suddenly. We can never consider our patients out of danger as long as there is any appearance of the disease, or the patient is yet debilitated. In my practice in this country in the year 1859, out of over 400 cases only four died in the active stage of this fever, yet six died after they were discharged from treatment and the parents cautioned as to their care, etc. Some died after days and even weeks of treatment, and others were dead before medical treatment could be procured, and many

others recovered after a long and severe illness.

Some constitutions appear to be proper subjects for the most violent and fatal forms of scarlatina. I have known many of the same family to die of this fever. One family in Jefferson County, Pa., is reported as having lost eight members of the family of ten children in the month of January, 1860, from scarlatina. Of the particular circumstances of these cases I have not been informed. I think this family might have had diphtheria and not scarlatina. I think, upon the whole, we may be safe in all cases to pronounce it very dangerous, let the case be ever so slight. I have known cases where the parents hardly knew that the children were sick until the sequel of anasarca was observed.

Sequelæ.—Scarlet fever frequently leaves a train of difficulties behind it that are very troublesome. The most common of these affections are anasarca, disease of the eye, bronchitis, enteritis, tonsillitis and abscesses of the submaxillary and parotid glands, etc.; also post-nasal catarrh and granulations of the fauces.

I have found many cases where the patient has been nearly deaf, and others nearly blind also with eruptions over the face, surrounding the nose, eyes, chin and nearly the whole face, caused entirely by the condition in which the throat, tonsils, fauces and post-nasal mucous membranes had been left after scarlatina. Patients who have been treated for a long time, from six months to two years, by specialists for loss of eyesight and partial deafness, and others for these eruptions of the face, etc., and all without effect, have called upon me for treatment, and in every case I could find no disease of the eye, ear or face, but the cases dated from the time of having the scarlet fever or diphtheria and had often existed for years. The kind of trouble in each case was owing to the special location of the irritation of the throat, fauces, larynx or post-nasal regions, and in every case, after full and thorough treatment of these troubles, the patient recovered and the irritation did not return, and this too without the least attention being paid to the eye, ear or face.

In fact these were nearly all the cases I had any trouble with in my practice in the year 1859 in this country in the treatment of over four hundred cases of scarlet fever; as before stated, only four died with the disease, while six died of sequelæ. I will not consider this part of the disease further. Frequently in post-mortem examinations of those who have died of scarlet fever, there can be found but slight morbid appearances, not sufficient to account for the fatal termination of the disease. In many cases where the inflammation and irritation of the throat have appeared to be most severe and distressing during life, the examinations have shown but slight traces.

In the summer of 1829 scarlet fever raged in an epidemic form in the place where I was raised. Every child in the place had the disease Dr. Lorenzo Dany was the physician who treated all these cases, and my first year's practice of medicine was in the town where the old doctor resided and had retired from practice. He often sat in our office and gave his very interesting experience, and, referring to that scourge of scarlet fever, said that was where he did his last bleeding in scarlet fever, and gave two boys of that town the credit of teaching him better than to bleed in that epidemic. These two boys fought so hard, kicking, striking and screaming, that he could not bleed either of them. Yet, while they were as sick as the worst cases, they both recovered and every case that was bled died, and from that time he never used the lancet.

A cathartic of calomel is recommended by some, and this is objectionable also, as it tends to prostrate the general system too much. I seldom give much in the way of cathartics, as there is so much liability to diarrhœa in the latter part of the disease; and when it is necessary to give laxatives in this fever, the mildest should be resorted to, such as minute doses of castor oil or magnesia. Small doses of ipecac may be given *pro re nata*, but not so large as to nauseate. This may be combined with bicarbonate of soda or creta præparata, as the case may require. Some recommend the use of veratum viride in the stage of excitement, but I have never used it; neither would I permit it in any form or in any of the stages of the disease, and I most emphatically denounce its use. There are found occasionally dark colored exudations covering a dark red or livid membrane, but seldom ulcerations. These last cases may have really been diphtheria, yet we have never seen any of these cases. Concrete exudations are often seen, sometimes extending through the pharynx, even to the œsophagus, but not often into the larynx. These exudations look very much as though they might be considered diphtheria. Various internal organs are more or less congested.

The alimentary mucous membrane often shows signs of inflammation. The appearance is different in different cases. A more thorough investigation is necessary and, it is hoped, will be made. There is no doubt that many cases reported to be scarlet fever were really diphtheria.

Cause.—Writers differ in many respects in regard to the cause of the disease; in fact all are in doubt, and I think further investigation is necessary before we can remove these doubts; therefore, I will say nothing further on the subject.

Treatment.—As to the treatment of this fever, there is as much diversity of opinion as in other things connected with it, and in many cases I think this difference is owing to the locality and season, as the disease appears in varied forms in different seasons and different localities.

In mild cases little or no treatment is required.

The bowels should be looked to and the body sponged with cold water if the surface is hot, and cooling drinks also given. In most cases, however, there should be an emetic of ipecac given in the first stage of the disease, but it should be given with caution. Many recommend bloodletting, but I am decidedly of the opinion that the practice is a bad one; yet, I have never used it in a single case, and in all cases where I have known it to be used it has had a tendency to evil rather than good.

Digitalis is also used and very highly recommended by some. I have used it in but few cases and can not speak from experience, but have no doubt that it would be of great use in some cases; but it should be employed with great care on account of its liability to accumulate in the system, and it should not be used in any case where the action of the heart is weak, or at any other time than in the first stage, or while the pulse is very frequent. The chlorate of potash is much used, and it is a very valuable remedy in these cases in most all the stages, or at least as soon as the excitement is allayed a little. A solution of chlorate of potash, chloride of sodium and bicarbonate of soda should be used freely; oil of turpentine may also be given, and sulphate of quinia may be freely administered in cases inclining to debility. I have frequently given quinia in form of solution with asafœtida and aqua cinnamomi in cases of debility, and always give carbonate of ammonia and also brandy or whiskey in cases of much nervous irritability and debility. The patient should be allowed the free use of cold water and to hold ice in the mouth, if there is much heat and thirst.

Local treatment.—In slight cases a gargle of sage tea, honey or sage tea, and borate of soda is all that may be required; but in a case of any importance a preparation of capsicum, chlorate of potash and chloride of sodium with vinegar and water may be used as a gargle, or the powdered pepper mixed in water or vinegar and put on a sponge or camel's hair pencil and applied to the throat; a solution of zinci sulphas may be used. I have used the myrrh gargle with the best effect. A solution of creosote I have sometimes used with good results, but the very best gargle is chlorate of potash, chloride of sodium, gum acacia and the bicarbonate of soda. When the mouth, tonsils and pharynx are greatly irritated, inflamed or ulcerated, and to prevent the possibility of gangrene, nothing has ever proved as useful in my practice as the use of a mixture of ergotine with camphorated tincture of iodine and glycerine.

℞. Ergotine, 4 scruples; saturated tincture of iodine and saturated with gum camphor, one-half ounce; glycerine, 4 ounces. Use with brush freely *pro re nata*. This preparation can be used locally in nearly any stage of the disease.

A good test of the full course of treatment given above was clearly shown in the spring of 1853, while I was from home some time resting and treating myself for chronic bronchitis. A very severe epidemic of scarlet fever broke out in Kearsey, Caledonia and Weadville, Elk county, Pa., and nearly every case proved fatal. I was sent for to return at once, which I did, and took charge of all the cases. I at once put all the houses and all the surroundings in proper order, disinfected all the houses, clothing and bedding, removed all the surplus clothing, bedding, beds, etc., and had them disinfected and stored for a time out of the houses, and whitewashed all cellars, all outbuildings, fences, etc., also scattered quicklime over the cellar bottoms, and placed a good supply of lime in boxes in every room to air slack, and used the treatment referred to above, as each case indicated. The result was, every patient then sick recovered and no other cases appeared, only in a very slight form. All of which is respectfully submitted.

THE CLINIC.

REGULAR THROAT CLINIC AT CHICAGO MEDICAL COLLEGE, NOV. 30, 1889.

BY W. E. CASSELBERRY, M.D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, AND OF LARYNGOLOGY AND RHINOLOGY.

[Reported for THE JOURNAL.]

TERTIARY SYPHILIS OF THE PHARYNX—OPERATIONS FOR NASAL POLYPUS—TECHNIQUE OF ELECTRO-CAUTERIZATION FOR HYPERTROPHIC RHINITIS.

Gentlemen:—Our first patient is complaining of "sore throat," and on examination we find a condition which is so characteristic that, without other history, we are justified in asking him when he contracted syphilis.

One observes deep ulceration in the region of the left posterior pillar, the entere pillar and the neighboring tonsil having been destroyed; also a deep, irregular ulcer on the posterior wall, which is covered with purulent fetid secretion. Near the centre of the velum, at its point of junction with the hard palate, is a gummy tumor, soft and caseous within, and with a small ulcerating surface aperture, through which the probe will pass. A perforation, therefore, already exists, and in a condition to extend rapidly, even perhaps to the point of extensive destruction of the velum and uvula. These are tertiary or late manifestations of syphilis which occur in the pharynx at a period of from one to five years up to any length of time after primary infection. They should be distinguished from the secondary throat symptoms, erythema, mucous patches and superficial

ulcers, which appear during the first three months and are liable to continue only through the year.

In this case further interrogation elicits a history of chancre eight years ago, which was followed by typical secondaries, and during the last four years, off and on, by severe throat lesions, the tertiary ulcerations. The tertiary ulcer originates by the formation of a gummy deposit in the depths of the tissue, which, through pressure interference with its own vascular supply, subsequently disintegrates and results in extended loss of substance. The process respects neither cartilage nor bone, and the ravages which certain neglected or virulent cases present, resulting in destruction of the nose, intranasal and pharyngeal structures, are truly appalling. Fortunately the disease is readily controlled by treatment, and potassium iodide for this stage is a specific. We will prescribe large doses for this patient, 60 to 100 grains per diem, for a time, taken in divided doses copiously diluted, on an empty stomach, in order to check at once the destructive gummy infiltration and disintegration of tissue.

Local treatment is of importance in limiting the ulcerative process and in promoting cicatrization. Perfect cleanliness should be maintained by antiseptic and alkaline sprays or washes, and the ulcers touched up daily with a solution of iodine and potassium iodide of each 20 grains in equal parts of water and glycerine to make one fluid-ounce, applied carefully by a cotton swab.

The next patient seeks relief from what he calls "catarrh," a colloquialism which is almost meaningless, for the reason that the symptoms indicated by the term can proceed from a score of different forms and distinct stages of disease, which may affect the upper respiratory tract. In this case the disability is occasioned by nasal polypi, or, more correctly speaking, nasal myxomata, and he suffers in consequence from obstruction of the nose, muco-purulent discharge, headache and aural complications. Reflex phenomena, such as asthma or cough, are not noted, for he has no tendency to bronchitis or emphysema, hence presents no susceptive peripheral point of attack, and his nerve centres are far from being in a superexcitable state, factors which are necessary, in conjunction with nasal irritation, to complete the reflex cycle.

On examination we find in each nostril several soft, elastic tumors, which are smooth in appearance, of a light yellowish or pinkish hue, and movable by the probe. They occupy the space between the middle turbinated body and the lower border of the inferior turbinal, extending over to the septum, leaving the inferior meatus almost clear. They are attached in the middle meatus and can be traced by the probe to the neighborhood of the hiatus semilunaris, from the sharp edges of which they evidently grow. Zuckerkandl, who made post-mortem examinations of some fifty distinct growths, ascertained that the middle meatus furnished the points of attachment in about two-thirds of all cases, and that two-thirds of this number proceeded from the edges of the hiatus semilunaris, a crescentic opening which unites, in the middle meatus, the apertures of the antrum of Highmore and the frontal sinus.

Polypi do not grow in healthy noses, and this patient suffers also from hypertrophic rhinitis, which is the most common cause and complication of nasal myxomata. His turbinated bodies are enlarged and the mucous and sub-mucous tissues thickened. When hyperplasia occurs upon a free edge, as at the hiatus semilunaris, the pendulous position with gravity, among other factors, favors the production of a circumscribed œdema and the transformation of the ordinary hypertrophic inflammatory process into a myxomatous type.

It is an extremely practical point in the radical treatment to be able to judge of the deep point of origin from the superficial position of the neoplasm and the direction of its pedicle toward attachment, as we can then often destroy the very root of the growth by insinuating a properly curved point-electrode to the spot.

This case was exhibited at the clinic on a previous occasion, and each of you had an opportunity to inspect it previous to the operation for to-day. To remove the tumors we may use a variety of means. The old method of "going it blind" with a pair of forceps is obsolete. The nostril is illuminated by reflected light. The instruments which are most in favor at the present time are (1) the cold wire snare and (2) the galvano-cautery snare. The latter has no advantage except the possible avoidance of hæmorrhage for a longer time when it is desired to snare several growths from a nostril at one sitting. The cauterization of the base secured by the hot wire snare is not of sufficient depth to avail in preventing recurrence. For this purpose the cautery point-electrode, deeply insinuated to the bone, must be employed after the cautery écraseur, as well as after the cold snare. In order that both methods may be observed, we will remove the polypi on the right side, in this case, by means of the cold wire snare, and then operate on the left side with the galvano-cautery écraseur.

We use the Allen snare, threaded with piano wire No. 5, an instrument which is so contrived that the wire can be drawn home by the same hand which holds it. Snares which require both hands to manipulate them are unsatisfactory, for the reason that one hand is otherwise needed.

The object is to carry the wire over the polyp and to insinuate it around the base of the tumor at its root, so that in shortening up the wire one may cut as closely as possible to the point of attachment. We have previously sprayed the nos-

tril with a 5 per cent. solution of cocaine. We will, for a few minutes, apply a stronger solution —10 per cent.—upon cotton. Now, having enveloped the mass of polyp by the snare, the nostril being distended bp a self-retaining speculum, we grasp the movable neoplasm with a pair of forceps, to prevent it slipping away from the snare, and even draw it downward, while the loop is pushed upward around the pedicle, which follows into the middle meatus. Thus, we have now removed not only one, but a whole group of polypi at a single snaring, there being five of them, pyriform in shape, making a single mass of perhaps three-quarters of an inch in depth by half an inch in width, all having a common base or stem.

Examined microscopically sections of these polypi would show a few round embryonic cells or anastomosing stellate cells, imbedded in an intercellular substance of mucin-containing serum. Nasal myxomata, however, usually contain enough fibrous tissues to include them, quite strictly speaking, within the class of myxofibromata.

We again spray with cocaine to relieve pain and then immediately cauterize the point of attachment by inserting a point electrode slightly curved on the flat, into the middle meatus and sweeping its white-hot surface over the edge of the hiatus semilunaris. On the left side the polyp, which we will remove by the galvano-cautery écraseur, is further to the rear and more difficult to reach. The instrument consists of a pair of parallel tubes threaded with a loop of steel wire (piano wire No. 5) inserted into a handle which carries a little windlass to wind in the wire. Platinum wire, usually recommended, is not well adapted to the purpose, as it is devoid of resilience, and cannot therefore be pushed between surfaces in contact without destroying the contour of the loop. From the ends of the steel wire which wind around the windlass the temper should be withdrawn by heating. The cords leading over our right shoulder connect the handle with the cautery battery. Otherwise the procedure is the same, and we withdraw thus quite a large myxoma. No hæmorrhage here, such as followed the cold snare on the other side, and we can see to remove another and perhaps still a third neoplasm. The pain attending the operations is not great, the patient, after the application of cocaine, being well able to withstand the necessary manipulations.

A few words in reference to the complications and the method of dealing with them in connection with the polypi. As already said, nasal polypus is not a primary disease, but a neoplasm which ensues largely in consequence of rhinitis. But all individuals with hypertrophic rhinitis are not affected by polypus. As with other neoplasms —sarcoma, fibroma or carcinoma, there may possibly exist a constitutional predisposition of a nature too subtile for demonstration. However, the hypertrophic rhinitis is the chief coexisting factor, stenosis and defective drainage ensue, decomposing muco-purulent secretions are imprisoned especially in the middle meatus, and furnish a suitable soil for polyp growth—a sodden condition of the mucosa which seems to favor the myxomatous form of hyperplasia. Stenosis also results in consequence of septal deviation and excrescences which, acting in conjunction with hypertrophy of the turbinated bodies, may so occlude the nostrils as to prevent the passage of instruments and light to the seat of growth, and the exit of discharges. To effect a radical cure of nasal polypus one must also remove the causes and complications. Septal excrescences should be cut or sawed away, deviation straightened, and the hypertrophied turbinals treated by the galvano-cautery.

This last patient, gentlemen, affords an excellent example of hypertrophic rhinitis—the most frequent of all forms of nasal "catarrh." He complains of obstruction to nasal respiration, which alternates between the two sides, sense of nasal discomfort and pressure headache. All the turbinate bodies are enlarged, the right inferior turbinal at this moment having undergone erection to the point of complete obliteration of the cavity of the nostril.

We present this case solely for the purpose of demonstrating the method of treatment by the electro-cautery just recommended in connection with this disease as a cause of nasal myxomata.

Mild forms of the disorder can be successfully palliated, even cured, by the judicious use of antiseptic alkaline, and warm vaseline sprays, with systemic and hygienic aids. But for marked hypertrophy with stenosis the only satisfactory method of treatment is cauterization. Five per cent. cocaine solution on cotton is placed in contact with the whole length of this inferior turbinate body for five minutes, and meanwhile your attention is invited to the technique of the operation. The knife electrode is commonly used, but we prefer as better adapted to the purpose the ordinary point electrode, which we curve slightly upon the flat, using the surface of the platinum end, and not the very point, with which to burn. This makes a broader eschar than the knife electrode, it is less apt to occasion hæmorrhage, it requires less space in transit through the nostril, and it adapts itself better to the curved contour of the turbinal, permitting application further toward the posterior end of the body.

The cocaine retracts the erectile structures and temporarily provides space through which the unheated electrode is passed, the length of the platinum tip is pressed against the turbinate body, commencing as far posteriorly as one can see, and then, when at cherry-red heat from the battery, it is drawn slowly forward, marking its passage by the production of a white linear eschar.

Through this same linear eschar we now draw the instrument a second and a third time. More than one linear cauterization should not be made at the same sitting, but we have drawn the electrode three times along the same track in order to obtain sufficient depth, as the subsequent cicatrix, in addition to breaking up the free continuity of blood-vessels and substituting a certain overplus of tissue, should serve also to bind down the neighboring portions by attachment to the bony base. Bad cases require ten to twelve applications of the cautery, at intervals of one to two weeks, three or four on each lower turbinal and others of less extent on the middle bodies. Antiseptic cleansing sprays should be used during the intervals. The reduction of the hypertrophy will relieve all the pressing symptoms, but it will not remove the inherent tendency toward rhinitis, hence subsequent treatment should be pursued as for simple chronic rhinitis without pronounced hypertrophy.

MEDICAL PROGRESS.

The Strophanthus Pulse in Heart Disease.—At the International Congress for Therapeutics and Materia Medica, Paris, 1889, Bucquoi demonstrated the strophanthus pulse by means of sphygmographic tracings obtained from fourteen patients after the administration of strophanthus. The curves show the following peculiarities: The up stroke is higher and steeper and the angle more acute; the pulse resembles the aortic pulse. The increased cardiac action drives the blood more rapidly into the vascular system; the up stroke therefore becomes higher and steeper. The pulse becomes stronger, the number of beats diminishes and the pulsations generally become more regular. Contrary to the views of the physiologists, Bucquoi holds that strophanthus is not an agent that acts directly upon the vasoconstrictors, and that therefore it may be employed with advantage in aortic defects. Upon the whole, the remedy acts immediately upon administration. It may be given for a long time without disadvantage, and its effects are lasting, like those of digitalis, but it should not be given when the heart muscle is greatly weakened or degenerated; in these conditions strophanthus is without effect, and this failure of action indicates a grave prognosis.

Lépine expressed the opinion that the increase in the up stroke is caused by an increase in volume of the left side of the heart, which is a symptom constantly observed in experiments upon animals.

Konstantin raised the question whether one is justified in speaking of heart tonics. A true tonic should not only temporarily increase the strength of an organ, but should also lend it strenth to be stored up for subsequent use; such is the action of quinine in malaria. Heart tonics, although they do indeed regulate the pulse and increase its tension, nevertheless weaken its power, and paralyze it quite if the dose is increased or if they are given for too long a time. Their action is rather a supplementary one, affecting the obstacles in the circulation, rather than a strengthening one, acting upon the heart muscles. To the category of cardiac remedies which can be administered without injury for a long time belongs also the convallaria majalis, the active principle of which, although as yet unknown, seems to be found in the aqueous extract of the root.

The Antipyretics.—Prof. Lépine, in a review of progress for 1889, expresses the following opinions relative to the value of some of the antipyretic agents: The study of the antipyretics remains the order of the day, and we have to record the continued success of antipyrin. Its field of usefulness has been extended to include the greater number of nervous affections and its action has proved beneficial in the most dissimilar kinds of cases. If each medicament, as some people affirm, displayed merely the same action in disease as in health, its indications would be sufficiently limited; but with such a remedy as antipyrin, which, upon the whole, is simply a nervine (sedative) of a particular class, the indications are infinite, because an abnormal nervous excitation may produce very different effects, varying according to the part af the nervous system affected, and because whatever these effects may be, a sedative agent, like antipyrin, for example, is capable, at least in certain cases, of removing them, provided it be employed in suitable doses. Thus, I have cured a case of hysterical anuria with antipyrin, although this substance is very far from being a diuretic.

The extensive employment of this useful agent has led to many accidents, not merely those of eruption and fever, but also to other still less expected and perhaps even grave, as, for instance, epileptiform accidents, although antipyrin has been considered a useful remedy in epilepsy; such accidents, however, should not surprise us, for they only confirm what has already been said.

Acetanilid continues to be but little employed in France, in spite of its cheapness, and in spite of incontestible advantages which it possesses in certain cases, such as the case with which it is tolerated by the stomach. Furthermore, it relieves pain better than antipyrin. Abroad, where acetanilid is not the object of unjust prejudice, its employment is increasing. Its use is also, and I may say especially, attended by accidents, for often sufficient attention is not paid to

proper dosage, although, to be sure, these accidents sometimes appear in spite of the greatest precautions. But the fault is not always attributable to the physician, or to the remedy, but sometimes to individual susceptibility—idiosyncrasy, as in the case of opium.

It is an incontestible fact that the antipyretics, to an even greater extent than opium, affect the susceptibility of certain nerve structures; thus, I know a lady who has given up antipyrin because of the dysuria and tenesmus which it produces in her case. But coffee produces exactly the same effect in other persons, who are obliged for this reason to abstain from its use.

Of phenacetin one hears but little. It is sufficiently anodyne, is certainly very useful, and has probably come to stay.

I do not think as much can be said of exalgine, which was introduced by Dujardin-Beaumetz and Bardeé. I confess that I have employed it but little, because when I first used it I found that it produced cyanosis, as does acetanilid, and because it did not appear to possess any advantage over the latter remedy.—*La Sem. Méd.*

LOCAL ANÆSTHESIA BY COCAINE.—M. RECLUS regrets that cocaine has not come into more general use. Although it has been pronounced inefficacious and dangerous, the writer has successfully employed it in injections more than 700 times. He finds that *intradermic* injections alone are efficient; cutaneous applications are without effect, while applications to mucous surfaces may sometimes be employed for slight operations. Cocainized injections in the washing out of hydroceles and old hydrarthoses have given excellent results.

As interstitial injections alone possess much value in operations upon the integument, care must be taken that the injections penetrate the skin itself, instead of passing into the subcutaneous cellular tissue. If the parts are very thick it will be well to make several injections, one over the other. Under such conditions anæsthesia is always obtained, and the same is true of inflamed tissues, although this has been denied. The reporter has seen the effects obtained by these interstitial injections continue for an hour, and has been able to perform radical operations without inflicting pain. The bones alone seem insusceptible to this influence. In ano-rectal affections and in the painful operations necessitated by them, the employment of tampons saturated in a 2 per cent. solution and a series of interstitial injections, forming a circle, will secure complete anæsthesia, so that dilatation of the rectum even can be performed painlessly.

The reporter has made 700 injections without accident; he has carefully searched the literature of the subject and has found only four reports of death, and in these large quantities of cocaine were used, viz: 75 centigrm., 1.20 centigrm., 1.25 centigrm. and 1.50 centigrm. Below 75 centigrm. there have been no serious accidents. Such appearances as pallor of the face, shortness of breath, loquacity, tendency to syncope, etc., have been seen, but with ordinary doses, 20 centigrm. or more, accidents are very infrequent. Ordinarily 10 to 12 centigrm. are sufficient.—*Congrés de Chirurgie, 1889.*

EXTIRPATION OF THE UTERUS IN AN AGED PATIENT.—DR. ULLMANN recently exhibited before the Society of Physicians of Vienna a patient 81 years of age, upon whom he had practiced extirpation of the uterus. The patient had suffered twenty years from prolapsus uteri, and for months the lower portion of the organ had been ulcerated. There was also rectocele, with moderate prolapse of the rectum, vesicocele, and slight prolapse of the urethral mucosa. A microscopical examination of the ulcerated surface demonstrated the presence of carcinoma. By reason of the favorable position of the organs and the slight danger of hæmorrhage Ullmann determined to extirpate the uterus. After the operation the bladder and vagina were pushed back and the vagina closed by silk sutures. As a result of cicatricial contraction the vagina was shortened. The bladder and rectum are now in proper place.—*Wiener Med. Woch.*

DETECTION OF ANTIPYRETICS IN THE URINE.—O. SCHWEISSINGER (*Pharm. Cent.*) proposes the following color reactions:

	After the addition of one drop of the perchloride of iron.	After the addition of one drop of concentrated sulphuric acid.
Phenic acid	Blue.	Light yellow
Salicylic acid	Violet blue	Colorless
Resorcin	Blue	Yellowish brown
Kairin	Dull, dirty brown	Reddish brown
Antipyrin	Reddish brown	Colorless
Thallin	Green	Green

These reactions are produced especially when, after agitating the urine with ether, the latter is evaporated and the residue treated with perchlorate of iron or concentrated sulphuric acid.

TREATMENT OF ERYSIPELAS.—KOCH (*Wiener Klin. Woch.*) recommends for the treatment of erysipelas the application of an ointment consisting of creolin 1 part, iodoform 4 parts, lanolin 10 parts. This is applied with a bristle brush to the affected portions of the skin and three or four finger-breadths beyond to the healthy appearing portions. In twenty-five cases treated by this method he has observed, after three or four applications, a fall of temperature, limitation of the disease, and blanching of the skin. The after-treatment was also favorably influenced by this treatment.

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THE SURGICAL TREATMENT OF GENERAL PARALYSIS OF THE INSANE.

An examination of the reports of our insane asylums will show the large proportion of cases of general paralysis of the insane among the inmates of these institutions, and treatment has rarely resulted in recovery. Sometimes, as is familiar to the medical officers of asylums, there will be a marked improvement in the mental condition of patients of this class, and the hope is entertained that recovery will follow; but this improvement is usually temporary, and the relapse is a condition worse than before.

A short time ago DR. T. CLAYE SHAW reported in a conservative manner a case of general paralysis with bulbar symptoms, that was seen also by DR. FERRIER, who agreed that the case was fast becoming one of dementia, and that trephining alone afforded hope of relief. Dr. Shaw based his conclusions of the promise of relief afforded by the operation on the fact that pathological appearances indicated irritative processes in the upper layers of the convolutions, with later pressure symptoms; and, as nerve stretching (suspension?) had proved beneficial in ataxia, brain stretching—that could only occur by increasing its space for expansion—would relieve the pressure of the cerebral fluid and diminish the arterial tension that the sphygmograph has shown existent in such cases.

Accordingly, in this case the patient was trephined over the right central sulcus, about two inches outside of the longitudinal fissure. MR. HARRISON CRIPPE operated, making two holes with a trephine and, cutting away the intermediate bone, secured an opening in the skull about one and one-half inches long by three-quarters of an inch wide. The dura mater was then incised and a "considerable quantity" of subarachnoid fluid escaped. By the tenth day the wound had healed, and no cerebral symptoms had been present after the operation. Though there was but slight improvement in the bulbar symptoms, those of *folie de grandeur* no longer existed. The patient was seen by DR. CLIFFORD ALLBUT, who agreed with Dr. Shaw that the man was no longer insane.

Subsequently the distinguished alienist, DR. J. BATTY TUKE, reported a case of paresis that he saw in consultation with DR. MUIRHEAD, in the early stage of the disease. In this case there was a syphilitic history, but the symptoms of intracranial pressure were so marked that the patient was trephined above each parietal eminence. The bone was thicker on the right than the left side, and the dura mater bulged on the former, but not on the latter side. The wound healed by first intention, and for five days the patient's hallucinations ceased and he seemed more rational. At the end of that period the old symptoms returned, and the patient was subsequently transferred to an insane asylum, and when last seen was markedly ataxic and had pronounced dementia. It will be noticed that in this case, that was operated on just a short time previous to Dr. Shaw's, the trephine opening was not so large, nor was any attempt made to drain the dura mater, an omission that Dr. Tuke would have remedied, had the case remained under his care.

If we examine the reasons for the operation we find that we have a disease that is usually fatal, from a destruction of the functional activity of the brain by intracranial pressure. The experiments of ADAMKIEWICZ, NAUNYN and SCHREIBER have shown that slight variations in pressure will cause certain definite phenomena, and it is a reasonable conclusion, that has almost been positively demonstrated by these two cases, that a relief of this pressure will relieve the symptoms in general paralysis of the insane. It is not to be presumed that the connective tissue changes that take place in the vessels and convolutions will be at once absorbed; but the brain is restored

to a more nearly normal condition that will probably admit of compensatory changes occurring. The operation, if properly performed, entails but moderate danger to the patient, and it is worth while considering whether even temporary alleviation of the condition is not desirable for the patient as well as for his relatives.

Certain English as well as German alienists have hastened to condemn Dr. Shaw's operation, on theoretical grounds, the Germans even asserting that any permanent benefit is as fallacious as to expect any permanent improvement to follow "wet stretching" of the sciatic nerve for ataxia. But the gentlemen associated in these two cases occupy positions that entitle them to a respectful hearing from the profession, and the operation must be condemned not by theory, but practice.

CORRECT OFFICIAL INSTRUCTIONS AS TO DISINFECTION WITH SULPHUR.

The Kentucky State Board of Health has put forth a circular about contagious disease prevention, which is the first, within our knowledge, that instructs the people how to thoroughly disinfect the sick-chamber, after the recovery or death, or removal of the patient. The circular in question is issued with the intent to prevent diphtheria, that disease having been unusually prevalent in many sections of the State. Its teachings with regard to the rigid observance of the known modern requirements as to fumigations with sulphur are much more accurate than the average board of health directions. They, of course, apply to other communicable diseases besides diphtheria. They are in effect the teachings of the report, of three years ago, prepared by Dr. G. M. Sternberg and his associates on the special committee of the American Public Health Association. In that report the injunction is frequently given that all fumigations by sulphur shall be done "in the presence of moisture." As will be seen in the paragraph given below from the new Kentucky circular, this "moisture" is sought to be provided for by the dampening of the contents of the chamber that is to be cleansed. This circular directs the following procedure:

"To disinfect the room proceed as follows: Arrange the contents of the room so as to expose the greatest amount of surface to the action of the disinfectant. Close the apartment as completely as possible, stopping all openings, as chimney flues, key-holes, etc., through which the gas might escape. *Thoroughly dampen the floor, walls and furniture.* For a room 10 feet square use 3 lbs. of sulphur, moistened with alcohol, in an iron pan placed in a tub containing a few inches of water, to avoid danger from fire. When certain the sulphur is burning well, leave the room, close the door and allow the room to remain tightly closed for ten or twelve hours. Afterward the room should be thoroughly ventilated for several hours, and then the floor, and ledges over windows and doors, and other places likely to retain dust should be washed with the chloride solution and then with soap and hot water. The house and premises generally should be put in the cleanest and best condition possible."

Whether this method is the best and whether it is free from objection, time will demonstrate. There may possibly result from it some bleaching of colored articles by the action of nascent oxygen liable to be generated when the sulphur dioxide comes in contact with wetted goods, and there may be some minor damage beside. We are aware that the method recommended by Dr. E. R. Squibb, cited on page 448 of the current volume of this journal, calls for a larger amount of "moisture" and directs that it be present in a different form, namely: as vapor of water, produced by boiling, within the apartment, while the fumes of sulphur are in process of liberation. The experience of a hundred health officers and others has demonstrated, as we believe, beyond the peradventure of a doubt, that sulphur has an efficiency excelled by few, if any, of our utilizable chemicals, and it is very much to be hoped that its position as a disinfectant may be strengthened by the adoption of right methods of employing it. For this reason, if for none other, we would call the attention of all those who have considerable dealings with contagious diseases to the new circular of the Kentucky Board of Health, as an improvement upon those which have been disseminated by our authorities during recent years.

Cincinnati Obstetrical Society.—Dr. W. H. Wenning has been elected President, Dr. T. P. White, Secretary, and Dr. J. L. Cleveland, Treasurer, of the Cincinnati Obstetrical Society.

THE ASSOCIATION OF THE FUTURE.

No one familiar with the facts, will fail to accord to those who have labored so earnestly for its welfare the full meed of praise so justly their due for the successes which have attended, in the organization and development of the American Medical Association in all its past history. But we should be dull students indeed, if in all these forty years since its organization we had not gained some experiences that shall prove valuable with reference to its further development. Our annual meetings have been, to those attending, both pleasing and profitable. During the six years of its existence THE JOURNAL has been an added means in increasing the interest of the medical profession in the welfare of the Association.

But the fact remains, that though a certain number is added each year to the membership, by reason of attendance upon the annual meetings —still the aggregate is not materially increased.

When we appreciate the fact that under wise and timely effort it is possible to combine in one association a very large percentage of the one hundred thousand regular physicians on this continent and to number its membership by thousands, as it now numbers them by hundreds, we are impressed with the conviction that the counsels of our wisest and best men should be summoned to the solution of this important question.

Men of ability, men of culture, may and do find pleasure and profit in their annual meetings devoted to special subjects, and in presenting their valuable papers before a coterie of like cultured hearers.

But what were this in comparison with the reading of those same papers before a thousand listeners who have need of the truths they are so able to express?

Is there not possible a union of all the strong men in the nation for the furtherance of every department of medicine and surgery?

Is it not feasible that an executive committee may so formulate for each meeting a programme, and so designate the persons to participate in the discussions, as to amply reward attendance by the masses of physicians, whatever may be the grade of their attainments?

The Association should forever be divorced from Sectional or personal schemings or personal ambitions. Above and beyond all individual interests it should be catholic in spirit, National in its representation, and grandly representative of the entire medical profession on this Continent.

We invite the candid expression of the matured thought of men who have the welfare of the Medical Association of the future at heart, as to the measures necessary to the accomplishment of these results.

EDITORIAL NOTES.

HOME.

THE DATE OF THE ANNUAL MEETING.—There seems to have been a misapprehension on the part of some members of the Association as to the date of the next annual meeting. This doubtless arises from the fact that the place of meeting governs as to the time when it shall be held. In the Southern portions of the Union the sessions are held in May, while in the Northern States they are convened in June. For special reasons the last meeting was deferred until June 25. Reverting to the established rule, the Association will meet this year at Nashville on Tuesday, A.M., May 20, the third Tuesday in the month.

THE SECRETARY'S REQUEST.—Members of the medical profession who desire to secure special rates for themselves and their families in attending the meeting at Nashville in May, or the International Congress at Berlin in August, will find it for their interest to confer personally with the Secretary of the Association. Address Wm. B. Atkinson, 1400 Pine St., Philadelphia, Pa.

THE BACILLUS OF INFLUENZA.—It is reported that a bacillus has been identified at Vienna as peculiar to epidemic influenza. It has points of resemblance to the coccus of pneumonia, but is not identical with it. It is described as being dark blue in color and having a cassock-shaped head. One writer says that it is not unlike the exclamation point; which, if true, will bring it into the punctuation series of Dr. Koch, who inaugurated that series with the comma bacillus of cholera.

SALUS POPULI.—"The real wealth of a people is not counted by its gold, silver, or broad acres. These are sources of material interest and physical greatness; above these, as high as the heaven is above the earth, as a simpler question of value, is the health of the people. Here is the manhood, the real civilization, the source of its con-

tent, happiness, and its good will to men."—Dr. J. W. Jones, in *The North Carolina Bulletin*, January.

THE DAWSON PRIZES.—The annual contest for the Dawson prizes at the Good Samaritan Hospital, of Cincinnati, was entered by a larger number of aspirants than usual. These contests in bandaging, drawing and dissecting are made by the students of the Medical College of Ohio, and excite much rivalry in their respective departments. Five doctors from Cincinnati and vicinity are chosen in each arena to act as judges. They render their decision impartially and hand it to Dr. Dawson in a sealed envelope, which he opens Commencement night, and announces the successful names. The occasion is made a half holiday, with Prof. Dawson as master of ceremonies. A number of speeches are made, interesting cases are shown, and the annual feast winds up the occasion. The students and profession greatly appreciate Dr. Dawson's great-heartedness and liberality.

FOREIGN.

EXHIBIT OF NURSING UNIFORMS.—The medical journal, *Hospital*, has organized an exhibition of uniforms for nurses of over a hundred patterns at the Charing Cross Hospital, London. These are chiefly the uniforms devised and in use in institutions of Great Britain. The various costumes are draped upon miniature figures and are the work of the nurses. The show will probably be so interesting and attractive that it will be made permanent for purposes of reference.

SKIN-GRAFTING FROM THE GREYHOUND.—In one of the London infirmaries a boy, badly burned from knee to ankle on one leg, has been under treatment. Shortly after admission extensive skin-grafting was put in practice, the grafts being taken from a greyhound pup. The skin-strips that were applied to the burned leg were about 6 inches in length and ½ inch in width. They were all united except one, at the end of four days. The patient was discharged cured at the expiration of six weeks after the grafting was practiced.

A NEW SANITARIUM.—The Gilbert Islands may possibly come into prominence as a sanitarium for consumptives, if the reports are true regarding the novelist, Robert Louis Stevenson. These islands, also known as the Kingsmill group, lie in the mid-Pacific waters, and thence has come the report that Mr. Stevenson has found a climate specially suited to his condition, and that he is growing stout.

A HOME FOR CONVALESCENTS.—Sir William Savory has just announced, through the London medical journals, that £100,000 sterling will presently be donated by an anonymous philanthropist for the construction of a convalescents' home near London. Mr. Savory and Mr. Cross, both of St. Bartholomew's Hospital, will be on the Board of Trustees.

THE MEDICAL SICKNESS-RELIEF SOCIETY.—About five years ago there was organized in London a society of medical men for their mutual insurance against sickness and accident and for like purposes. The full title of the company is the Medical Sickness, Annuity and Life Assurance Society, and is indicative of the wide range of self-help designed to be brought within the operations of its charter. It enables young and old, practitioners of every part of the country, to unite in making a mutual provision against the financial calamities of sickness, accident, disablement, chronic disease and death. The cost of running this society is less than 5 per cent. of its income, whereas 18 per cent. is a low average cost for insurance management, according to the authority of the *British Medical Journal;* and this unprecedentedly cheap insurance is effected by reason of its having a Council of management of medical men who serve without charge. The reserve has reached nearly $185,000, and a balance of profit has accrued to the amount of $30,000, the property of the members. The relief which has been extended has been most timely and encouraging in many instances. One member who had contracted a purulent ophthalmia states that he feels that he would have died but for the prompt aid which the Society afforded him, and which made it possible for him to get a change of air and surroundings at a time when he was losing ground constantly and rapidly.

THE RIGID STAATS-EXAMEN.—A late report of the German board which conducts a portion of the Staats-examen inquiries in medicine and surgery, shows that of 683 candidates 504 were rejected, or a proportion of only 26 per cent. of successes.

TOPICS OF THE WEEK.

DIPHTHERIA.

MM. Roux and Yersin have published in the *Annales de l'Institut Pasteur* two memoirs entitled "Contribution à l'Étude de la Diphthérie," in which they minutely describe their methods of research and the results they afforded. The bacillus of diphtheria cultivated in broth renders it acid, afterwards alkaline; in the alkaline state it is excessively toxic in consequence of the soluble products contained in it. These products, used for inoculating guinea-pigs, rabbits, and small birds, produce, according to the dose, acute diphtheria or a chronic septic condition accompanied by characteristic paralysis. A series of experiments made by these investigators show that the bacillus of diphtheria secretes soluble toxic substances. These MM. Roux and Yersin supposed might probably resemble a ferment. They sought to ascertain in the organs of patients dead from diphtheria the presence of the same diphtheritic virus that was detected in the microbe cultivations. The spleen of a child which had died from diphtheria was macerated and crushed in water, then filtered; 8 cubic centimetres of the fluid were inoculated under the skin of a guinea-pig; 30 cubic centimetres were injected into the veins of a rabbit. The guinea pig grew thin and died five days after the injection; the rabbit lived two months; the hind legs became paralyzed. When the diphtheritic virus is filtered away from the cultivation broth it remains intact a considerable time, provided it is not in contact with the air. This virus is most virulent in an alkaline medium; in an acid medium a strong dose is necessary to kill the animals under experiment. MM. Roux and Yersin suppose that the alkaline properties of the cultivation fluid are due to the oxidation of the nitrogenous substances contained in the broth. Cultivations made out of contact with the air are not alkaline. In cultivations two or three months old crystals of ammonia-magnesium phosphate appear. Filtered cultivation fluid mixed with lactic or tartaric acid injected into guinea-pigs, caused slight œdema; a dose of half the quantity in which the acid was neutralized caused death in a short time. The longer diphtheritic virus remains in contact with an acid the weaker it becomes; carbolic and boric acid and borax retard the toxic action but do not arrest it. Introduced into the digestive tract diphtheritic virus does not produce any disturbauce even in large quantities. In certain respects this virus appears to resemble diastase, although it does not change sugar nor albuminoid substances. It acts specially on the coats of vessels, causing vascular dilatation, hæmorrhage and œdema, resembling somewhat the action of venom. Animals do not get accustomed to the influence of this virus. This is frequently manifested after inoculation. MM. Widal and Chantemesse, in a series of careful researches on the bacillus of diphtheria, have observed that the solution of Dr. Soulez (de Romorantin), which consists of 5 grams of carbolic acid, 20 grams of camphor, 30 grams of olive oil, does not arrest the cultivation of the bacillus, but renders it slower; nor does the addition of tartaric acid according to M. Gaucher's method increase the antiseptic properties of the solution. These investigators think that this negative result is owing to the presence of olive oil and fatty bodies. Oils are bad sterilizing media, because they do not moisten the cells. Camphorated naphthol has been used with satisfactory results in M. Chauffard's wards in the Broussais Hospital. MM. Widal and Chantemesse in their laboratory experiments found the following mixture the most successful: 25 grams of glycerine, 5 grams of carbolic acid, 20 grams of camphor. The mixture is shaken for ten minutes in a water bath. When cold this mixture separates into two layers—a lower and an upper; the former fluid, the latter white and viscous —a compound of glycerine, phenol and camphor. Silk threads impregnated with the virus of diphtheria were plunged for twenty seconds in this mixture, then washed in alcohol at 95°, and used for inoculating a tube of broth; but the broth remained sterile. Nevertheless, alcohol at 95° does not kill the bacillus of diphtheria. This mixture has not yet been used in treating diphtheria, but MM. Widal and Chantemesse say it is slightly caustic, and adheres to the surface with which it is in contact. It may be applied twice a day to the throat. Every day the throat should be well washed out with a solution of naphthol, or of carbolic acid. In order that the antiseptic agents may come in contact with the mucons membrane, the false membranes should be removed by means of a tampon of wool. Herr Kolisko and Herr Paltauf, in fifty cases of diphtheria, studied in the course of two years' researches on croup and diphtheria, invariably found Löffler's bacillus in every form of diphtheria which fell under their notice. In a case of vaginal diphtheria it was absent. Widal's researches have proved that this form of diphtheria is due to the presence of the streptococcus pyogenes. Löffler's bacillus develops easily in the serum of blood mixed with a quart of nourishing sweetened broth, also in pleuritic effusion mixed with peptone and sugar. Near the false membranes or in the mucous membrane, MM. Kolisko and Paltauf have observed, in addition to Löffler's bacillus, staphylococci and streptococci; in the liver they only observed it once. Inoculations with pure cultivations of Löffler's bacillus only caused inflammation, but the cultivation fluid, passed through a porcelain filter used for inoculation, killed the animals under experiment. Staphylococci and streptococci are inert. Kolisko and Paltauf believe that Löffler's bacillus is the sole cause of diphtheria.—*Brit. Medical Journal*, December 28, 1889.

PERNICIOUS ANÆMIA.

More evidence in support of the view of pernicious anæmia being a hæmolytic process, initiated, probably, by some ferment in the gastro-intestinal tract, and evinced, therefore, most markedly in the portal blood, a view well worked out by Dr. W. Hunter, of Cambridge, has been lately adduced by this observer in a series of papers contributed to the *Practitioner*.[1] The subject matter of his contributions consists in observations on the excretion of pathological urobilin, of blood pigment, and of iron. He made careful analyses of the urine in a typical case of the disease, and draws especial attention

[1] "Observations on the Urine in Pernicious Anæmia." By Wm. Hunter, M.D. (From the Cambridge Pathological Laboratory.

to the exceedingly high color of this fluid, although the average specific gravity was never above 1016. Indeed, in the later stages, when the quantity passed was greatest and the specific gravity lowest, this deep coloration was most marked. Such a condition cannot fail to arrest attention, for it is in marked contrast to the character of the urine in other forms of anæmia. The fact, too, has been noted by other observers. Bile pigments were not the cause of the coloration, but spectroscopic examination proved the presence of pathological urobilin, which MacMunn has shown to be distinct from the urobilin of normal healthy urine, and its occurrence was found to be associated with an excessive elimination of bile into the intestine. This increased production of bile pigments indicated an increased disintegration in the liver of hæmoglobin; but Dr. Hunter remarks that not all the "pathological urobilin" could have had this hepatic origin, since at death, when the urine still remained of high color, there was no excess of bile in the duodenum or small intestine. The probability is that other organs also yielded this product of blood destruction, and that some of the pigment in the urine was due to increased absorption from the intestine. Besides this, however, a study of the minute appearances of the kidney in this disease shows an accumulation of pigment granules in the epithelium of the convoluted tubules during life, whilst tube-casts and cells containing such granules may be detected, especially at certain periods of exacerbation of the disease, when it might well be inferred that the blood destruction was more intense. These facts led to an inquiry as to the excretion of iron in the urine in health and disease. Dr. Hunter estimates that the average daily excretion of iron is from 3 to 5 milligrams. It is remarkable that the administration of iron by the mouth very slightly, if at all, increased the amount of iron excreted. Dr. Hunter found in one observation in health the quantity of iron excreted in the urine was 5.65 milligrams; in one case of chlorosis, 1.71 milligrams; in another, 1.96 milligrams; and in a third, 1.61 milligrams, considerably lower than the average, but consonant with the diminished richness of the blood in hæmoglobin characteristic of this affection. In a case of pernicious anæmia, however, the amount of iron in the urine passed about three weeks before death was no less than 32.26 milligrams, twelve days later 6.52 milligrams, and two days before death only 1.00 milligram. It is just ten years ago that Dr. Finny reported a case of pernicious anæmia in which Dr. Emerson Reynolds found a considerable quantity of iron in the urine; but otherwise the observations on this head are comparatively few. Still, such as they are, they harmonize completely with the hæmolytic theory, and are all the more striking when it is remembered how very deficient the blood is in coloring matter during the closing stages of the disease. Dr. Hunter thinks that these three conditions of the urinary pigments—viz: the presence of pathological urobilin, the presence of granules of blood pigment as detected by the microscopical examination of the urine, and an increased excretion of iron—are of importance not only from the pathological standpoint, but also diagnostically. Not, indeed, that such changes are always to be noted in pernicious anæmia, but in periods of its course, periods when the disease is undergoing exacerbation, and which the examination of the blood, as well as the general condition of the patient, prove to be periods of increasing hæmolysis; for pernicious anæmia is seldom—in its earlier stages at least—regularly progressive. Many physicians have had experience of cases in which there was amelioration for a time, followed by a subsequent rapid relapse of the weakness and anæmia; and the irregular pyrexia so characteristic of the affection also seems to denote this liability to exacerbation. The observations he has made regarding urobilin likewise tend to support Dr. Hunter's contention of the blood destruction being initiated in the portal system, and we look forward to his promised further investigations into the nature of the gastro-intestinal changes which he believes to be the *fons et origo mali*, and into the measures to be taken to combat these changes; for if his view be the true one, it is hopeless to expect any other permanently successful method of treating pernicious anæmia than by attacking the disease at its source.—*The Lancet.*

ERYSIPELAS.

From a leading article entitled "Facial Erysipelas," by Dr. Geo. T. McCoy, published in the January number of the *Indiana Medical Journal*, we quote the following conclusions:

1. Erysipelas, as it exists to-day, is the same disease, with the same characteristics, as the disease known by the same name in the days of Hippocrates.

2. It is a local disease, with marked constitutional symptoms.

3. It exists only as a traumatic erysipelas, and is a contagious, infectious, parasitic disease.

4. That with the erysipelas cocci are other pathogenic germs, producing, when introduced into the system, their peculiar morbid effects.

5. That the erysipelas cocci, when introduced into the organism, acts by developing a chemical substance known as ptomaine, to which is due the systemic intoxication.

6. Erysipelas and lymphangitis are probably identical, differing only in degree.

7. That in the arrest of the disease the phagocytes play an important part, and are probably the agents by which the organism rids itself of the infectious bacteria, their mode of action not being definitely determined.

8. Attacks of erysipelas may modify the character and development of malignant growths, and in some cases produce permanent cures.

INCOMPATIBLES OF ANTIPYRIN.

An editorial paragraph in the *British Medical Journal* suggests that the liquid extract of cinchona and mixtures of chloral hydrate are not compatible with antipyrin.

The writer in the *Journal* does not assert that the result of the combination of chloral with antipyrin may not contain the properties of the drugs. A fuller investigation can only determine whether the mixture is potent or inert.

PRACTICAL NOTES.

THE TREATMENT OF INFLUENZA.

M. Henri Huchars, writing in the *Revue générale de Clinique et de Thérapeutique* of Dec. 12, 1889, offers some suggestions concerning the treatment of influenza which may be of interest at this time. "In all epidemics of the disease," he says, "the most marked clinical feature is the adynamic character of the symptoms, and it is against this that treatment should be chiefly directed. For this reason preparations of cinchona, alcoholic beverages, and the like, should be prescribed early; and in grave cases, where the prostration is profound, injections of ether or of caffeine may be needed. Quinine is generally indicated by the remittent character of the fever, and, for the control of this, should be given in one dose of from eight to fifteen grains in the forenoon. If the fever persists in spite of this, it may be well to give fifteen grains of antipyrin in the evening. But even when the fever is not high the use of quinine in tonic doses is advisable. In the rheumatoid or neuralgic forms, characterized by severe pains in the joints, muscles, and other parts of the body, we may resort to antipyrin in doses of fifteen grains two or three times a day. Instead of this drug we may use phenacetin or salol in eight-grain doses. When the disease assumes the broncho-pulmonary form the adynamia is commonly very pronounced, and the necessity for stimulants becomes even more pressing. The nourishment should consist chiefly of milk, which acts as a diuretic, and favors the elimination of the waste products. Blisters are inadmissible in the pneumonia following influenza, which is preeminently a local manifestation of a general disease, for they do not benefit the local process, and only aggravate the general condition. Occasionally the dyspnœa, even when the pulmonary affection is apparently limited in extent, becomes extreme. In this case much benefit is often derived from the use of strychnine. Sometimes, especially in the renal form of the affection, the only thing that will relieve the dyspnœa is a venesection, though ordinarily this is the last thing thought of in a disease in which the adynamic tendency is so pronounced. In the gastro-intestinal form it is necessary to employ mild purgatives, such as castor-oil or calomel, and to obtain intestinal antisepsis by means of salicylate of bismuth, or of magnesia, naphthol, etc. If an emetic is at any time indicated, tartar emetic should never be used, but ipecac given in preference."—*Medical Record.*

TREATMENT OF INFANTILE DIARRHŒA.

In a paper on the fermentative diarrhœas in infants, read before the Harveian Society and reported in the *Lancet*, Dr. Luff, while admitting that though probably several irritating substances from the fermentation of milk are factors in the production of the form of acute infantile diarrhœa under consideration, contended that the principal cause was the milk or cheese ptomaine, tyrotoxicon, produced during the fermentation of milk under certain conditions. The treatment of acute infantile diarrhœa with the view of arresting the abdominal intestinal fermentation was then considered. Carbolic acid, creasote, resorcin, salicylic acid, salicylate of soda, naphthol, and salol have been given in the hope of checking the putrefactive changes in the bowels. Ringer has recommended the administration of a weak solution of bichloride of mercury in infantile diarrhœa attended with very slimy stools. Dr. Luff then referred to Illingworth's antiseptic treatment of infantile diarrhœa, which he had himself found most useful, and the employment of which had first directed his attention to the treatment he now employed. This treatment consists in the administration of one-fiftieth of a grain doses of the biniodide of mercury dissolved in iodide of potassium, combined with one-grain doses of chloral hydrate. It was shown experimentally that the soluble biniodide of mercury is an extremely soluble and diffusible salt, and that it possesses the property of combining with and rendering insoluble the milk ptomaine, tyrotoxicon. He has never found that the soluble biniodide of mercury itself acts as an intestinal irritant. Of eighty cases of acute infantile diarrhœa treated by this method, the diarrhœa ceased within two days in seventy-two of the cases; in five of the remaining eight cases it ceased within four days, and in no case did it last over seven days.—*Medical News.*

INTRA-LARYNGEAL INJECTIONS OF MENTHOL IN PHTHISIS.

Mr. Walker Downie, in the Glasgow *Medical Journal*, December, 1889, reports excellent results in the treatment of tubercular laryngitis early phthisis with the intra-laryngeal injections of solutions of menthol in olive oil. To the solution he usually adds pure creosote in the following proportions:

Creasote	2 parts.
Menthol	12 "
Olive oil	86 "

An ordinary hypodermic syringe with a detachable vulcanite laryngeal tube is the most satisfactory apparatus. In administering the injection the laryngeal mirror should be used, by means of which the curved nozzle can be guided into the larynx without coming in contact with the tongue or fauces, thus obviating all risk of retching. The point of the syringe should be just below the vocal cords when the fluid is injected. If the fluid is applied to the cords, it produces a choking sensation, often with spas-

modic cough. From twenty to thirty minims should be injected at intervals of a few minutes until a drachm and a half has been used. The patient's immediate sensations are a comfortable warmth throughout the chest, loss of inclination to cough, and disappearance of "tightness" of the chest, if it existed. Cough is often absolutely checked for from four to eight hours. Expectoration is reduced in amount and purulency. The majority of patients gain in weight, and high temperature is often permanently reduced during treatment.

The probable explanation of these effects is that the menthol acts as a local anæsthetic to the mucous membrane of the larynx and bronchi; that it is a powerful, though harmless, stimulant; and that it is an antiseptic which, being very volatile, is rapidly diffused throughout the lung. —*Medical News.*

THE CLIMATOLOGY OF HÆMOPTYSIS.

Dr. Roland G. Curtin, of Philadelphia, in an address before the American Climatological Association, June 25, 1889, tabulates the influence of climate on hæmoptysis under two heads: first, the preventive and curative; and second, the causative:

1. Preventive and curative elements.

Rarefied air arrests the ulceration or other diseased processes and lowers the arterial tension. This greatly overbalances the unfavorable tendency of increased heart action and loss of support to the lungs from diminished air pressure.

Cold air contracts the tissues and blood-vessels, thus preventing a flow of blood when such tendency exists. Its general invigorating effects are beneficial.

Dry air dessicates the pulmonary tissues, decreases the fluidity of the blood, and blocks up the blood-vessels—all favoring the arrest and prevention of bleeding.

Aseptic air favors repair and cure of lung disease, and kills or dwarfs the action of the disease germ.

Outdoor life, when not associated with too much exposure, exertion or fatigue, is beneficial.

Sunshine improves the general nutrition.

2. Causative elements.

Sea level air, by its greater density, diminishes the tendency to hæmoptysis, but the increased arterial tension and the moisture usually present in such localities more than counterbalances the beneficial effect of the support given by the air pressure.

Salt air hastens the breaking down process in tubercular lung disease. The effect is probably good in syphilitic lung troubles, and sometimes in simple chronic inflammatory, non-tuberculous lung affections.

Moist air hastens the ulcerative process, liquefies the blood and secretions, and renders the tendency to the oozing and flowing of the blood more liable.

Warm air relaxes the tissues and blood-vessels and enervates and relaxes the system at large.

Thus he concludes that each case should be carefully studied in all its phases before deciding upon a change of residence. On a high mountain (say from 5,000 to 10,000 ft. [1,550–3,100 metres]), a residence far removed from the sea-coast, is best for a patient with a tendency to hæmoptosis. At a location of this kind one would probably have not only a rarefied, but a cold, dry, aseptic air—factors which would be most beneficial. Care should be taken that the elevation of the patient should be gradual and not too rapid; otherwise the early effects of a sudden elevation might be followed by unpleasant results. A case of syphilitic phthisis will probably be benefited by sea air, while a tubercular patient would be injured by it. —*Satellite.*

CHLORAL HYDRATE IN SCARLET FEVER.

As a rule, the drug is easy of administration, and well borne by the stomach. Wilson says: I have found its acrid after-taste best marked by the administration in Aubergier's syrup of lactucarium, diluted thus:

℞ Chloralis. gr. xxx.
Syr. lactucarii (Aubergier), ...
Aquæ. āā ℥iss.

M. Sig. A teaspoonful in iced water every two, three or four hours.

The administration of nourishment immediately after the medicine is desirable. The sleep-inducing properties of the drug manifest themselves rapidly, but are not prolonged; therefore, its repetition at intervals of two or three hours is called for—*Medical News.*

SALOL IN GONORRHŒA.

Dr. Dreyfous has treated seven cases of gonorrhœa with salol. The doses varied from five, seven to eight grams. The discharge was less abundant. In a recent case, in which gonorrhœa appeared some time before seeking advice, Dr. Dreyfous obtained a complete cure in a few days. M. Dreyfous has tested the effect of salol administered alone, and in other instances he has given it simultaneously with copaiba and cubebs in order to hasten the cure. He recommends the use of salol to surgeons who operate on the urinary organs; it renders urine aseptic, which is thus innocuous when in contact with raw surfaces. Aseptic and antiseptic conditions result from giving salol internally.—*Brit. Med. Journal.*

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Special Meeting, Nov. 19, 1889.

W. F. KNOX, M.D., PRESIDENT, IN THE CHAIR.

[Abstracted for THE JOURNAL.]

CASE OF AMPUTATION AT HIP JOINT.

DR. MURDOCH: This case of amputation at hip-joint I did at the West Penn Hospital on the 28th of August—twelve weeks ago. Recovery from an amputation at the hip-joint is a very rare occurrence in an adult. The operation has been done a good many times. I have performed it several times myself, and this is the first case of recovery I have had. The case is also interesting because of the disease. I have in my hand the femur of the patient who suffered this amputation. It is from a girl 18 years of age, from Beaver county, a native of Pennsylvania. When, last February, she suffered some pains in the upper part of the thigh, she applied to Dr. Simpson, of New Brighton, who recognized an osteo-sarcoma, and brought the girl to me at the West Penn Hospital on the 23d of August. The tumor was then very much enlarged and I amputated at the hip-joint. The disease is, as you see, osteo-sarcoma. It involves chiefly the periosteum, and that is said to be the most malignant type of that disease, more likely to recur than when it attacks the centre of the bone. It has been twelve weeks since the amputation, and the girl is now in perfect health. At the time of the operation she was emaciated, could not sleep without large doses of morphia, and since the amputation she has been in comparatively good health, her pain has left, and there has been no return of the disease in the stump. Amputation at the hip-joint possesses an exceedingly great mortality. So great is the mortality following primary amputation at the hip-joint that of the twelve amputations made in the Crimean war—primary amputations—all died. Previous to our own war, of thirty cases of primary amputations, owing to gunshot injuries, not one survived. The history of primary amputation at the hip-joint in our war is a little more favorable, but not much. There were nineteen primary amputations, and of these eleven died from the shock of the operation within a few hours after amputation; five died within forty-eight hours from other causes, and there were only three who recovered, and only one that was known to be alive two years after the amputation, and that one case I feel particular interest in, as I was the surgeon who controlled the artery at the time of the amputation. This is known in the history of the war as the Shippens case, and was performed on a Pennsylvania private, a young man by the name of John Kelly, who is now living at Black Lick, in this State, in excellent health. This is the only case on record, I believe, that has lived over two years after primary amputation at the hip-joint. Amputations for disease are a little more favorable than for injury, and there are a great many cases of recovery, but still even then it is a very fatal operation. Mr. Lister's abdominal tourniquet has been a great assistance to surgeons in this operation. In the case I report I was able to control the hæmorrhage very effectively by the reliable assistants who assisted at the operation. I will not go into a description of the operation. The girl is now well. I pass this specimen (the tumor and the femur) around among you; it is a beautiful specimen of osteo-sarcoma—one of the finest of which I know.

TINCTURE OF IODINE IN MIDDLE EAR DISEASE.

DR. ALLYN: I would like to call attention to the use of tincture of iodine in the treatment of a species of chronic middle ear disease. To arrest discharge from an ear suffering for any length of time, I have many times been unable, with the use of all applications usually made, powdered iodoform, bichloride, and all the others I could bring into use. Many times the cause of this is the presence in the ear of a substance, whitish, tough, of an aspergillus nature. It has the faculty of reproducing in one night, all that you can remove during the previous day's work. It adheres to the skin and grows very rapidly. I have been embarrassed with several of these cases, trying nitrate of silver up to the 10th per cent. and 20th per cent. applying it to the ears after I had tested the power to bear such strong applications. Under a 2 drachm solution this seemed to thrive. I know the danger of using iodine in the middle ear. A case came to me that had been treated before, and all the applications of bichloride and of nitrate of silver in the strongest degrees failed to make any impression. I mopped the ear in the inner parts with vaseline, protecting it as thoroughly as possible. Then I made a solution of glycerine and tincture of iodine and worked upon the parts exposed, touching only the parts visible.

I succeeded in clearing that ear perfectly leaving not the slightest particle of pus. I did that in two weeks, seeing the patient each day. Another case which had been running through childhood, I succeeded a few weeks ago in stopping the discharge for about a month only. After trying all the other applications which I felt were safe, I resorted to the iodine treatment. After mopping with vaseline I first introduced glycerine into the ear, with no bad results. I then added about a tenth part of the tincture of iodine to it without bad results.

After the operation was made, I filled the ear thoroughly with clear water, followed it with

iodoform and it was the last application I needed to make.

NASAL DIPHTHERIA.

DR. GREEN: About four weeks ago I was called to see two cases of diphtheria. The family had lost two children, one of them just one week previous. The child had nasal diphtheria; the membranes had grown down so as to be distinctly perceptible. Small membranes on both tonsils. I gave large doses of calomel frequently administered, and made a tampon of absorbent cotton wet with a solution of bichloride of mercury one to a thousand, and plugged the nose as completely as I could. I allowed it to remain about twenty minutes. Before doing this I syringed the nose thoroughly with a solution of borax. I left some of the mercury solution, and told the mother to place the cotton every two hours until my return. The same evening I applied iodoform, reduced with calcined magnesia. On my visit the next day at ten o'clock the membranes had entirely disappeared from the nose. Hæmorrhages occurred infrequently, but there was no reappearance of the membranes. About one week from that time I saw a similar case in a little girl about five and a half years of age. I subjected the patient to the same treatment, and the case rapidly recovered.

DR. HUSELTON: Did the membranes from the throat disappear at the same time with the membranes of the nose?

DR. GREEN: They disappeared fully within forty-eight hours. I gave large doses of calomel, 10 grs. per hour.

DR. DAVIS: I would like to ask Dr. Green for how many hours he kept that up?

DR. GREEN: I used mild chloride of mercury in large doses frequently administered. I administered to the first patient I think about 120 grs. in the first twenty-four hours. The membranes from the throat disappeared not as rapidly as the membranes from the nose.

DR. LANGE: I desire to say that I think Dr. Green's treatment very judicious, especially the 10 grs. of calomel per hour. I myself give infants 5 grs. of calomel every hour for three or four hours without salivation, without purgation. This has been so universally my experience, that calomel does not purge in diphtheria, that I sometimes take this as a criterion as to whether I have a case of diphtheria or an aggravated case of follicular tonsillitis. In such cases, where the calomel has purged the patient, I have concluded that I had not to do with diphtheria, because of my universal experience that in diphtheria calomel in 10 gr. doses does not purge nor salivate as a rule. I remember one boy who had nasal diphtheria who received at my hands 1 oz. and a scruple of calomel during ten days and was not purged, not ptyalized, and who recovered.

DR. THOMAS: I would like to state my experience of the calomel treatment of diphtheria. Every case that was malignant and that was at all aggravated died without exception. That is the history of what I saw of this practice with the large doses of calomel.

DR. KOENIG: For my part I desire to commend Dr. Green for the other treatment, perhaps also for the calomel treatment. I think that at the present day no one denies the value of antiseptics in diphtheria, and every one will admit that all of the remedies, with the exception perhaps of some that are recognized at the present time as of no virtue in diptheria, are antiseptics. Calomel itself, I imagine, is beneficial because of its antiseptic properties. No doubt, when these large doses of calomel are administered, more or less of it becomes entangled in the meshes of the membrane. I see no reason why it should not exert its antiseptic properties.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

England as a Health Resort—Pasteur on Influenza—Specimen of a Cardiolith—Agaricin—Surgeon LeQuesne—George Moore, M.D.

Invalids who frequent foreign health resorts, and in winter flock in great numbers to Southern France or Northern Italy, do not seem to be aware that resources are presented in this respect by England. At the present time many people are singing the praises of Cornwall as a winter resort for delicate persons, and a considerable amount of useful and interesting information is to be found in a pamphlet which has recently been issued. Many long years ago the well-known writer, Dr. Paris, called attention to a good many things that appear to be more or less forgotten now, and crop up again as novelties until critics have shown that they were already known. It is sixty years ago that Dr. Paris wrote to the effect that "the very coldest parts of England were less inimical to delicate lungs than the sharp and piercing air of those places, and more particularly Montpellier (fashionable in his day), with its alternating destructive winds; and as regards Nice, though protected from the 'misteal,' yet in the spring of the year it is infested with sharp winds from the east and from the north and southeast, which are highly mischievous to the valetudinarian." It is now claimed for Cornwall by many eminent medical men that not only are its winters the mildest in the kingdom, but that for summer residents there is no purer air than that of the great tract of Moorland which forms its centre and rises to a

height of some 1,300 feet, gradually declining westward. The consequence is that January at Penzance is as warm as at Madrid, Florence and Constantinople, while July is as cool as at St. Petersburg in that month.

M. Pasteur, who has just recovered from a severe attack of influenza, has given an interesting opinion on that malady. The physiologist refuses to believe that the influenza microbe has been discovered, and thinks it is impossible to say if the disease was contagious or miasmatic. M. Pasteur, in fact, wants the microbe to be produced, but owing to the malady now afflicting so many persons, neither he nor his fellow-laborers in the laboratory have been able to assist medical men in their researches as to the cause of the epidemic. At the time of writing it is satisfactory to be able to report that there has been a very marked decrease in the number of influenza cases applying for relief at all the large London hospitals.

A most interesting specimen of a cardiolith was shown at the recent meeting of the Pathological Society of London. It appears that the child from which it had been taken was a female aged 5 years, and was seized, seven days before death, with diphtheria. She was for three days under observation, and apparently died of cardiac failure. On opening the heart a hard concretion was found in the eighth ventricle; the other lesions were the usual ones of diphtheria. The mass was situated between the eighth segment of the tricuspid valve and the inner aspect of the part of the cardiac wall forming the eighth border of the organ. It extended from the point of insertion of the valve to the basis of some of the small papillary muscles. In shape it was much flattened and irregularly rhombic, its optical section being tenticular. The longest diameter measured about three-quarters of an inch. The other measurements were, from above downwards, half an inch; from side to side, a quarter of an inch. The surface in contact with the valve was slightly nodulated; the outer surface was smooth, except at four places near the posterior end of the stone, where it was adherent to the endocardium through four short fibrous-looking bands. The cardiolith was of a yellowish-white color and looked like a small piece of bone covered with a smooth, glistening membrane continuous through the fibrous adhesions with the endocardinal membrane. The mass felt hard, but in some parts was distinctly elastic, as if the hardness were due to the presence of a thin shell of bone. The interior was rather soft and granular. On minute examination it was found to be composed of four concentric strata, (*a*) an external layer of luminated endothelium, the superficial layers of that coat being composed of well-formed endothelial cells; the deeper layers were less distinct; (*b*) the next coat was much thicker, composed entirely of rounded masses of carbonate of calcium, at places deposited in the midst of luminated fibrous tissue; (*c*) still more internally there was an irregular layer composed of more or less crystalline, transparent masses of phosphate of calcium, mixed with hæmatin and typical crystals of hæmatoidin; (*d*) forming a nucleus there was a soft material partly composed of distinct coarse fibrin filaments mixed with much granular débris, all much acted upon in weak hydrochloric acid; some pigment was also found in the nucleus. From this structure it was argued that the concretion was a cardiac thrombus or polypus partly calcified, adherent to the cardiac wall and covered with endothelium.

Agaricin, the active principle of the fungus known as agaricus albus, has been attracting more attention again lately. In doses of one-twelfth to one-sixth, or occasionally even one-fourth of a grain, it is very effective in diminishing excessive cutaneous and pulmonary secretions, and as a means of checking diarrhœa and relieving dyspepsia. In the treatment of night sweats of phthisical patients agaricin is found of the utmost value. Decidedly astringent, and acting as an intestinal tonic in small doses, it reverses this action and produces a powerfully purgative effect whenever such doses are materially exceeded, and with individuals of special idiosyncracies even one-eighth or one-twelfth of a grain may prove too much. Doses of one-twentieth of a grain repeated pretty often and administered with a little Dover's powder are then found most useful. Given conjointly with pure terebene, excellent results are stated to have been obtained, and there appears to be good grounds for according to agaricin a systematic trial.

The new Infectious Diseases Notification Act is being adopted generally by the various sanitary authorities of the country. The corporation of the city of London has just given the necessary statutory notice of its adoption in respect of the port of London. By one of its sections the provisions apply not only to houses, but to every ship, vessel, boat, tent, barn, shed or similar structure; consequently all cases of infectious disease occurring on any ship lying within the district of the port will have to be reported at once to the Medical Officer of Health.

It is stated that the Council of Kings College, London, are about to confer the distinction of an honorary fellowship upon Surgeon LeQuesne, formerly a medical student of the college, and recently the recipient of the Victoria Cross for "conspicuous bravery and devotion to duty" under fire in British Burmah.

The profession has just heard with regret of the death, at the comparatively early age of 56, of George Moore, M.D., of Hertford street, Mayfair, after a short illness. Twenty years ago he came to London as a specialist in throat and chest

affections. Her Royal Highness, the Princess of Wales, whom he attended, has expressed her deep sympathy with his family, and great personal regret for the loss of one she had known and valued for many years.

Mr. Justice Stephens has held that delirium tremens caused by drink is free from responsibility for criminal actions. G. O. M.

International Medical Congress, Berlin, 1890.

INVITATION TO THE TENTH INTERNATIONAL MEDICAL CONGRESS.

In accordance with the decision of the Ninth Congress at Washington, the Tenth International Medical Congress will be held at Berlin from the 4th to the 9th of August, 1890.

By the delegates of the German Medical Faculties and the chief Medical Societies of the German Empire, the undersigned have been appointed members of the General Committee of Organization. A Special Committee of Organization has also been appointed for each of the different Sections, to arrange the scientific problems to be discussed at the meetings of the respective Sections. An International Medical and Scientific Exhibition will also be held by the Congress.

We have the honor to inform you of the above decisions, and at the same time cordially to invite your attendance at the Congress. We should esteem it a favor if you would kindly extend this invitation to your friends in medical circles, as way may offer.

We beg to accompany our invitation by a copy of the Statutes and Programme, as also by the list of the intended Sections and their Special Committees of Organization.

DR. RUDOLF VIRCHOW, President.
DR. VON BERGMANN,
DR. LEYDEN,
DR. WALDEYER,
Vice-Presidents.
DR. LASSAR, Secretary-General.

All communications must be directed to the General Secretary, Berlin NW., Karlstrasse 19.

REGULATIONS AND PROGRAMME.

1. The Tenth International Medical Congress will be opened in Berlin on Monday, August 4, 1890, and will be closed on Saturday, August 9.

2. The Congress shall consist of legally qualified medical men who have inscribed themselves as members, and have paid for their card of membership. Other men of science who interest themselves in the work of the Congress, may be admitted as extraordinary members.

Those who take part in the Congress shall pay a subscription of 20 marks (£1 stg. or $5) on being enrolled as members. For this sum they shall receive a copy of the Transactions, as soon as they appear. The enrolment shall take place at the beginning of the Congress. Gentlemen may, however, be enrolled as members by sending the amount of their subscription to the Treasurer[1] with their name, professional status and residence appended.

3. The object of the Congress is an exclusively scientific one.

4. The work of the Congress shall be discharged by eighteen different Sections. The members shall declare upon enrolment to which Section or Sections they intend more particularly to attach themselves.

5. The Committee of Organization shall, at the opening sitting of the Congress, suggest the election of a definite Committee (or Bureau), which shall consist of a President, three Vice-Presidents, and of a number—as yet undetermined—of Honorary Presidents and Secretaries.

At the first meeting of each Section a President and certain number of Honorary Presidents shall be elected; these latter shall conduct the business of the Sections in turn with the Presidents.

On account of the different languages employed, a suitable number of Secretaries shall be chosen from among the foreign members. The duties of the foreign Secretaries shall be confined to the sittings of the Congress.

After the termination of the Congress the editing of the Transactions shall be carried out by a Committee specially appointed for this purpose.

6. The Congress will assemble daily, either for a general meeting or for the labors of the different Sections.

The general meetings will be held between 11 and 2 o'clock. Three such meetings will take place.

The time for the sittings of the various Sections will be fixed by the Special Committee of each Section, it being understood, however, that no such sittings are to take place during the hours allotted to the general meetings.

Joint sittings of two or more Sections may be held, provided that the Bureau of the Congress can offer suitable rooms for such sittings.

7. The general meetings shall be devoted to

a. Transactions connected with the work and general management of the Congress.

b. Speeches and communications of general interest.

8. Addresses in the general sittings, as well as in any extraordinary meetings which may be determined upon, can only be given by those who have been specially requested by the Committee of Organization.

Proposals relative to the future management of the Congress must be announced to the Committee of Organization before July 1, 1890. The

[1] Treasurer's address: Dr. M. Bartels, Berlin SW., Leipzigerstrasse 75. Please to enclose a visiting-card.

committee shall decide whether these proposals are suitable to be introduced for discussion.

9. In the sittings of the Sections, questions and problems will be discussed which have been agreed upon by the special Committees of Organization. The communications of those appointed by the committee to report on a subject shall form the basis of discussion. As far as time allows, other communications or proposals proceeding from members and sanctioned by the Committee of Organization may also be introduced for discussion. The bureau of each Section decides as to the acceptance of such offered communications and as to the order in which they shall come before the meeting, always provided that this point has not been already determined in the sitting itself by a decree of the Section.

Scientific questions shall not be put to the vote.

10. Introductory addresses in the Sections must as a rule not exceed twenty minutes in length. In the discussions no more than ten minutes are allowed to each speaker.

11. All addresses and papers in the general and Sectional meetings must be handed over to the Secretaries, in writing, before the end of the sitting. The Editorial Committee shall decide whether, and to what extent, these written contributions shall be included in the printed transactions of the Congress. The members who have taken part in the discussions will be requested to hand over to the Secretaries before the end of the day, in writing, the substance of their remarks.

12. The official languages of all the sittings shall be German, English and French. The regulations, the programme and the agenda for the day will be printed in all three languages.

It will, however, be allowable to make use of other languages than the above for brief remarks, always provided that one of the members present is ready to translate the gist of such remarks into one of the official languages.

13. The acting President shall conduct the business of each meeting according to the parliamentary rules generally accepted in deliberative assemblies.

14. Medical students and other persons, ladies and gentlemen who are not physicians, but who take a special interest in the work of a particular sitting, may be invited by the President or be allowed to attend the sitting by special permission.

15. Communications or enquiries regarding the business of separate Sections must be addressed to the managing members thereof. All other communications and enquiries must be directed to the General Secretary, Dr. Lassar, Berlin NW., 19 Karlstrasse.

SPECIAL SECTIONS—COMMITTEES OF ORGANIZATION.

Anatomy.—Fleming, Kiel; Hasse, Breslau; Hertwig,[2] Berlin, W., Maassenstr. 24; His, Leipzig; v. Kölliker, Würzburg; Kupffer, München; Merkel, Göttingen; Schwalbe, Strassburg; Wiedersheim, Freiburg.

Physiology and Physiological Chemistry.—Bernstein, Halle; du Bois-Reymond,[2] Berlin, W., Neue Wilhermstr. 15; Biedermann, Jena; Heidenhain, Breslau; Hensen, Kiel; Hüfner, Tübingen; H. Munk, Berlin; Hoppe Seyler, Strassburg; Voit, München.

General Pathology and Pathological Anatomy.—Arnold, Heidelberg; Bollinger, München; Grawitz, Greifswald; Heller, Kiel; Ponfick, Breslau; v. Recklinghausen, Strassburg; Virchow,[2] Berlin, W., Schellingstr. 10; Weigert, Frankfurt a. M.; Zenker, Erlangen.

Pharmacology.—Binz, Bonn; Böhm, Leipzig; Filehne, Breslau; Jaffé, Königsberg; Liebreich,[2] Berlin N.W., Dorotheen-Str. 34 a; Marmé, Göttingen; Penzoldt, Erlangen; Hugo Schulz, Greifswald; Schmiedeberg, Strassburg.

Internal Medicine.—Biermer, Breslau; Gerhardt, Berlin; Leube, Würzburg; Leyden,[2] Berlin W., Thiergarten-Strasse 14; Lichtheim, Königsburg; Liebermeister, Tübingen; Mosler, Greifswald; Naunyn, Strassburg; v. Ziemssen, München.

Diseases of Children.—Baginsky, Berlin; Heubner, Leipzig; Henoch,[2] Berlin W., Bellevuestr. 8; Kohts, Strassburg; Krabler, Greifswald; Ranke, München; Rehn, Frankfurt a. M.; Steffen, Stettin; Soltmann, Breslau.

Surgery.—Bardeleben, Berlin; v. Bergmann,[2] Berlin N.W., Alexander Ufer 1; Czerny, Heidelberg; König, Göttingen; v. Lotzbeck, München; Schede, Hamburg; C. Thiersch, Leipzig; Trendelenburg, Bonn; Wagner, Königshütte.

Obstetrics and Gynecology.—Fritsch, Breslau; Gusserow, Berlin; Hegar, Freiburg; Hofmeyer, Würzburg; Kaltenbach, Halle; Löhlein, Giessen; Martin,[2] Berlin N.W., Moltkestr. 2; Olshausen, Berlin; Winckel, München.

Neurology and Psychiatry.—Binswanger, Jena; Emminghaus, Freiburg; Erb, Heidelburg; Fürstner, Heidelburg; Fleschsig, Leipzig; Grashey, München; Hitzig, Halle; Laehr,[2] Berlin-Zehlendorf; Jolly, Strassburg.

Ophthalmology.—O. Becker, Heidelburg; von Hippel, Giessen; Eversbusch, Erlangen; Hirschberg, Berlin; Leber, Göttingen; Michel, Würzburg; Schmidt-Rimpler, Marburg; v. Zehender, Rostock; Schweigger,[2] Berlin N.W., Roonstr. 6.

Otology.—Bezold, München; Bürkner, Göttingen; Kirchner, Würzburg; Kuhn, Strassburg; Kessel, Jena; Lucae,[2] Berlin W., Lützowplatz 9; Magnus, Königsberg; Moos, Heidelberg; Trautmann, Berlin.

Laryngology and Rhinology.—B. Frankel,[2] Berlin NW., Neustädtische Kirchstr. 12; Beschorner, Dresden; Gottstein, Breslau; A. Hartmann, Berlin; Jurasz, Heidelberg; H. Krause, Berlin; Michael, Hamburg; Schech, München; M. Schmidt, Frankfurt a. M.

Dermatology and Syphilography. — Caspary, Königsberg; Doutrelepont, Bonn; Köbner, Berlin; Lassar,[2] Berlin N.W., Carlstr. 19; Lesser, Leipzig; G. Lewin, Berlin; Neisser, Breslau; Unna, Hamburg; Wolff, Strassburg.

Diseases of the Teeth.—Busch,[2] Berlin N.W., Alexander Ufer 6; Calais, Hamburg; Holländer, Halle; Hesse, Leipzig; Fricke, Kiel; Miller, Berlin; Partsch, Breslau; Sauer, Berlin; Weil, München,

Hygiene.—Flügge, Breslau; Gaffky, Giessen; Graf, Elberfeld; F. Hofmann, Leipzig; R. Koch, Berlin; Lehmann, Würzburg; Pistor,[2] Berlin W., v. d. Heydstr. 13; Wolffhügel, Göttingen; Uffelmann, Rostock.

Medical Geography and Climatology (History and Statistics).—Abel, Stettin; Brock, Berlin; Dettweiler, Falkenstein; Falkenstein, Lichterfelde; Finkelnburg, Bonn; Guttstadt, Berlin; A. Hirsch,[2] Berlin W., Potsdamer Strasse 113; Lent, Köln; Wernich, Cöslin.

State Medicine.—Falk, Berlin; Günther, Dresden; v. Hölder, Stuttgart; Knauff, Heidelberg; Liman,[2] Berlin, SW., Königgrätzer Strasse 46 a; Schönfeld, Berlin; Schwarz, Köln; Skrzeczka, Berlin; Ungar, Bonn.

Military Hygiene.—v. Coler, Berlin; v. Fichte, Stuttgart; Grasnick, Berlin; Grossheim, Berlin; Krocker, Berlin W., Magdeburger Platz 3; Mohr, München; Mehlhausen, Berlin; Roth, Dresden; Wenzel, Berlin.

ASSOCIATION NEWS.

Committee on Dietetics.

The Committee on Dietetics invites papers on the subject, to be read at the coming session of the American Medical Association to be held in Nashville, Tenn. Those who accept the invitation will please send their papers, or the titles of the same, to either

E. A. WOOD, M.D., Chairman,
1720 Sarah St., Pittsburgh, Pa.,
or to FRANK WOODBURY, M.D., Sec'y,
218 S. 16th St., Philadelphia, Pa.

Section of Dermatology and Syphilography.

It is desired that all those who intend to read papers in this Section at the next meeting of the Association at Nashville, Tenn., May 20–23, forward titles thereof before February 25, 1890, to

WILLIAM T. CORLETT, M.D.,
333 Prospect St., Cleveland, O.

MISCELLANY.

STERILIZED LINT.—M. Regnier renders lint sterile by heating it to a temperature of 120° C. (248° F.) He had tested the antiseptic value of lint thus prepared in dressings applied after operations of various kinds, with good results. At a recent surgical congress he stated that he considered sterilized lint equal to antiseptic dressings.

THE dengue fever has been epidemic at Smyrna, and has attacked four-fifths of the population of one hundred and fifty thousand.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 25, 1890, to January 31, 1890.

Major Johnson V. D. Middleton, Surgeon U. S. A., is granted leave of absence for fifteen days. Par. 9, S. O. 21, A. G. O., Hdqrs. of the Army, January 25, 1890.

Capt. C. N. Berkeley Macauley, Asst. Surgeon, extension of leave of absence granted in S. O. 294, A. G. O., December 18, 1889, is further extended one month, by direction of the Secretary of War. Par. 1, S. O. 22, A. G. O., January 27, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 1, 1890.

P. A. Surgeon C. W. Rush, detached from Naval Academy, and placed on waiting orders.

Asst. Surgeon C. J. Decker, ordered to the Naval Academy, February 1.

P. A. Surgeon E. H. Green, detached from the "Alert" and placed on waiting orders.

Medical Inspector G. S. Beardsley, granted extension of leave to April 30, with permission to remain abroad.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, from December 1, 1889, to January 25, 1890.

P. A. Surgeon S. T. Armstrong, assigned to command hospital at New Orleans, La., when relieved at Cleveland, O. January 13, 1890.

P. A. Surgeon S. C. Devan, granted leave of absence for fourteen days. December 21, 1889, and January 16, 1890.

P. A. Surgeon P. C. Kalloch, to proceed to Portland, Ore., for temporary duty. December 21, 1889.

P. A. Surgeon E. Wasdin, granted leave of absence for nineteen days. December 16, 1889, and January 7, 1890.

P. A. Surgeon P. M. Carrington, to proceed to Cleveland, O., when relieved. January 13, 1890.

P. A. Surgeon W. D. Bratton, granted leave of absence for twenty-one days. December 19, 1889.

Asst. Surgeon S. Norman, relieved from duty at New York; to rejoin station, Evansville, and transfer property. January 18, 1890.

Asst. Surgeon J. B. Fattic, to join station, St. Louis. December 19, 1889. Granted leave of absence for thirty days. January 25, 1890.

Asst. Surgeon F. C. Heath, granted leave of absence for eleven days. December 3, 1889.

Asst. Surgeon J. B. Stoner, to rejoin station, New York. December 23, 1889. Detached and directed to report for duty on floating hospital "Stevens" at Baltimore, Md. January 18, 1890.

Asst. Surgeon A. W. Condict, to proceed to St. Louis, Mo., for temporary duty. December 16, 1889. To rejoin station, Louisville, for temporary duty. December 23, 1889.

Asst. Surgeon G. M. Guitéras, granted leave of absence for twelve days. December 16, 1889.

Asst. Surgeon J. C. Perry, granted leave of absence for ten days. January 8, 1890.

CASUALTIES.

Surgeon C. B. Goldsborough, died January 5, 1890.

Asst. Surgeon J. B. Fattic, resignation accepted by the President, to take effect February 28, 1890. January 25, 1890.

[2] Managing members.

THE

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ORIGINAL ARTICLES.

TOBACCO AMBLYOPIA.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY LEARTUS CONNOR, A.M., M.D.,

OPHTHALMIC AND AURAL SURGEON AT HARPER HOSPITAL AND CHILDREN'S HOSPITAL, AT DETROIT, MICH

Mackenzie, in his treatise on ophthalmology, first directed especial attention to the fact that, in some persons, tobacco exerted a toxic influence upon the optic nerve.

This view was fully confirmed by the observations of Hart and Wordsworth, published a few years later. Hutchinson followed with several series of cases published in succeeding volumes of the Ophthalmic Hospital Reports. Each succeeding series being studied in the light of the preceding ones, threw an increasing flood of light upon the varying phases of this interesting affection. Krenchell, in 1870, gave us an excellent treatise upon this subject, based upon the careful study of 183 cases observed in Hanson's Copenhagen clinic.

Forster and Leber, in 1868–69, published their method of correcting slight defects of vision by means of the color sense. Bjerrum discovered the value of using slightly different shades of the same color in detecting the slighter degrees of central scotoma. Mr. Nettleship has recorded much original research in the study of this disease; especially are we indebted for his accurate representation of the field of vision with reference to the color sense of its several portions. Numerous other observers in America and Europe have rendered varying assistance in the investigation of tobacco amblyopia. Yet, in spite of all that has been done, ophthalmologists are divided not only upon details, but upon the very existence of this disease. There is scarcely a question upon the opposing sides of which do not stand equally able thinkers and students.

It is important that at the earliest practicable moment a substantial agreement be reached. This can only be done by adding to existing knowledge careful observations as occasion shall offer, and frankly discussing the same. In the hope that a discussion upon some features of tobacco amblyopia, by the members of this Section, may aid in advancing our knowledge, I venture to briefly report some of my own observations, to give a study of several hundreds of cases reported by others, and to present some propositions based thereon for convenience of discussion.

First, is there a distinct affection to which the name of tobacco amblyopia may be fitly applied? Bearing upon the answer to this question I report the two following cases of tobacco amblyopia in teetotalers:

Case 1.—Mr. T. S., æt. 56 years, an Englishman by birth and a florist by occupation, came to me March 19, 1889, complaining of increasing disability to see. He had noticed this for about three months, but for the past month he had been utterly unable to read a newspaper or to see the worms upon rose bushes in his hothouses. The color of the red roses had diminished in intensity till it was a dirty color. To a very annoying degree he mixed up colors in decoration with plants. Yet formerly he had been justly celebrated for his skill and accurate taste. He had always been an indefatigable worker—in the busy season working frequently till near morning and at other seasons reading till midnight or past. His temperament was of the nervo-sanguine variety. Alcohol he had never taken except as a medicine, but for more than forty years he had been a constant smoker. His favorite method was a pipe which was kept constantly filled with the best tobacco. The more he was bothered, the more vigorously did he smoke.

On examination I found the vision of his right eye $\frac{2}{10}$, not improved by any glass. Jaeger he could not read at all. The pupil was small but moveable. Ophthalmoscopic examination showed that the central retinal arteries were very small, otherwise the fundus was normal.

In his left eye the vision was 18-200ths, but in other respects like the right. Before both eyes was a horizontal oval scotoma in which red and green could not be clearly recognized. All small objects placed in this field were indistinct. The surrounding portions of the fields of vision were normal. The tension of the eyes was normal, and in all respects other than those mentioned they were apparently sound.

On special inquiry I found that just previous to

the beginning of the failure of his sight, he had been greatly depressed by family affairs. For some weeks he scarcely slept or ate, but he smoked with greater vigor than formerly.

He was informed that his loss of sight was due to his abuse of tobacco, and that its recovery depended upon his entire abstinence from it. After some demurring he consented to reduce his allowance to four pipefuls a day. After a short time even these were dropped, and from that time till the present he has not used tobacco. To determine whether the optic nerve fibres still retained their vitality I gave him a few drops of nitrite of amyl, as suggested by Powers. As soon as the neck and face became flushed, his vision increased to $\frac{20}{50}$, but it speedily returned to its former standard. This showed that the loss of vision was probably due to a deficient blood supply to the central portion of the optic nerves. To promote the circulation of the retina, and to sustain the nervous system against the depression incident to the stoppage of the tobacco, I gave him full doses of strychnia, administering it both by mouth and hypodermatically. My aim was to get him under its full influence as speedily as possible and to keep him there. On March 30 his vision was R. E. 20-50ths, L. E 20-200ths.

April 9 vision was 20-40ths R. E.; 20-100ths L. E.

On May 5 vision was R. E. 20-30ths, L. E. 20-40ths. He was now able to read Jaeger No. 1 at 12 inches with the same glasses that he used before his attack.

June 16 vision was 20-20ths in each eye, Jaeger No. 1, and with the greatest ease. Says that he can again read till midnight as formerly, can recognize all colors, and all objects in every portion of the field of vision, as well as he ever could. There is no trace of the central scotoma for any color or any object. The retinal arteries have become normal in size.

Case 2 was a clergyman, R. T., æt. 43 years. He came to me April 4, 1889, on account of loss of sight. He said that his sight had been gradually diminishing for three months, but that for five weeks he had been unable to read the coarsest print. He suffered no pain or discomfort other than approaching blindness. He was a large, well developed man of nervo-lymphatic temperament —had been a hard worker in his profession, and at several times had shown symptoms of cerebral exhaustion. The vision of his right eye was 4-200ths, with — Do. 50 C. ax. 180° it became 20-200ths. The vision of his left eye was 20-200ths, with — Do. 50 C. ax. 180° it became 20-70ths. With these glasses he could read with difficulty Jaeger No. 2.

His fields of vision were normal at their outer borders, but in the centres were oval scotomata especially marked for red, though all objects were dulled.

Bringing him moderately under the influence of the nitrite of amyl his vision was temporarily increased to 20-70ths and 20-50ths for right and left eyes respectively.

An ophthalmoscopic examination was negative except that it showed a diminution of the calibre of the central retinal arteries. The discs seemed paler than usual.

He said that he had never used liquor except as it has been prescribed by a physician. But for two years he had been a hard smoker. In addition to smoking himself he stated that he had spent very many evenings with groups of brother clergymen who all smoked, hence the air that he breathed at these times was fully saturated with the fumes of tobacco. When his sight began to fail, he smoked more constantly in order to increase his comfort while listening to the reading of members of his family. He had been worried greatly for some time anterior to his noticing a failure of vision. His appetite had been poor, so that a general depression unfitted him to endure the tobacco.

He was told that his disability was due mainly to tobacco, and that the restoration of his sight depended mainly upon his dropping its use. In addition he was placed under the influence of strychnia. After the full effects were obtained, the dose was diminished one-half and continued. He was directed to wear the glasses correcting his astigmatism constantly. Improvement was immediate and rapid, so that by April 23 his vision was 20-30ths with each eye and he could read Jaeger No. 1 at 14 inches. The scotomata had entirely disappeared. His general condition, he said, was better than since he began the use of tobacco.

These cases have the following common features:

1. The patients were great smokers and total abstainers.

2. They suffered from a great and comparatively rapid loss of sight not remedied by glasses and not due to external changes.

3. The ophthalmoscopic changes were negative aside from a diminution in the size of the central retinal arteries.

4. There was a central scotoma for colors, the colors being readily recognized throughout the rest of the field of vision. This scotoma was not seen by the patient as a dark spot, and in this regard differs from the scotoma due to disease of the outer layers of the retina.

5. In each case there was a distinct history of mental worry and impoverished nutrition from loss of appetite, etc., preceding the inception of the first symptom of failing sight.

6. The fields of vision aside from the scotomata were normal.

7. The stopping of the tobacco was followed by a more or less rapid recovery of distinct vision throughout the entire fields of vision.

From various sources I have collected twenty-

seven cases in each of which tobacco was used to excess, but no alcohol, and each of which presented substantially the same symptoms as those already reported. Briefly I will give an abstract of some of these as affording evidence in support of our argument.

Mr. W. E. Cant (Ophthalmic Hospital Reports, Vol. ii, p. 71,) reports thus: John C., aet. 40, was seen August, 1885, stating that his left eye began to fail six weeks previous, and the right more recently. Before this he had good sight. For ten years he had been a teetotaler, but he smoked regularly two ounces of twist tobacco a week. There was no history of syphilis, and the urine was free from both albumen and sugar.

Vision right 6-18ths and Jaeger No. 6, not improved by glasses, pupil normal. There was central scotoma for red. The optic disc was rather misty and a single linear hæmorrhage of moderate size was seen near the disc, passing downward and outward. Left vision, 6-60ths and Jaeger No. 16, not improved by glasses. Large central scotoma for red existed on the right. Optic disc was rather misty, but paler on the temporal side than that of the right eye. He was directed to stop smoking and take strychnia.

On November 21, vision in right eye was 6-9 and Jaeger No. 1, and in left 6-12 and Jaeger No. 6. The retinal hæmorrhage in the right had disappeared, but the discs were unchanged. He had ceased to smoke.

Dr. Farnsworth (*Am. Med. Times*, Oct., 1862) reports a case of impaired vision which, in spite of treatment, grew worse till it was discovered that he smoked a pipe almost constantly, and the coarsest kind of tobacco. The abandonment of the tobacco was followed by gradual recovery.

Mr. George Berry (Ophthalmic Hospital Reports, Vol. x, p. 46,) says that he has met two typical cases of tobacco amblyopia in non-drinkers. One was an old man aged 70, who had been a teetotaler for forty years. The other was a boy aged 19.

Mr. Hill Griffiths (British Ophthalmological Society Reports, Vol. vii, p. 83, etc.,) reports five cases of tobacco amblyopia in total abstainers.

Dr. Charles Shears (*British Medical Journal*, June 21, 1884,) reports two cases of tobacco amblyopia in teetotalers, and Mr. Stanford one case.

Dr. G. Hartridge (*British Medical Journal*, Jan. 20, 1886,) reports one case of tobacco amblyopia in a teetotaler.

Dr. Alt (*American Journal of Ophthalmology*,) reports seven cases of uncomplicated central amblyopia.

Dr. J. J. Chisolm reports a case of tobacco amblyopia in a refined lady who had learned to smoke in order to keep her husband company.

Bendell reports seven cases of uncomplicated tobacco amblyopia.

Schwenitz reports a case of tobacco amblyopia in a young woman who simply worked in a tobacco factory.

In this list we have twenty-nine cases of central amblyopia occurring in non-users of alcohol. Many of the cases completely recovered on the diminution or entire stoppage of the use of the tobacco.

I have never met with but one case of amblyopia in a drinker of alcohol who did not use tobacco.

In this case the amblyopia was not central, nor was it regular in the two eyes. From the literature at my disposal I have been unable to find a single case of central amblyopia in a non-user of tobacco and yet a drinker of alcohol. Perhaps such cases have been observed, but I could not find them fully and accurately recorded.

Hence, estimating the cases of central amblyopia as induced by the abuse of alcohol alone, or by the abuse of tobacco alone, it would seem that tobacco induced all and alcohol none.

But the majority of cases of central amblyopia occur among those who use both alcohol and tobacco to excess. Of these I have been able to collect the records of some 700 cases, made with more or less fulness. It is held by many ophthalmologists that the central amblyopia is induced by the combined action of these two drugs. Yet, as we have already seen, tobacco alone will, and alcohol alone has not been shown to, induce the symptoms under conditions described. Farther, in these mixed cases recovery from the amblyopia has followed abstinence from tobacco while the intemperate use of alcohol has been continued. I have records of some twenty-five of these cases, all occurring in my own private practice. As the general nature of their histories is so similar to that of the two cases of tobacco amblyopia already detailed, I omit full histories and give the following:

Mr. Marlow (Ophthalmic Hospital Reports, Vol. ii, p. 71,) reports thus: D. Cromartie, aged 54, clerk, a tall, robust, florid Scotchman, was seen May 17, 1884. His sight had failed rapidly in both eyes just a fortnight before. On getting up one morning he found that he could not see to brush his hair and that he could not read. He said that people's faces looked pale, that he saw better in a dull light, and that he confused copper with silver.

Visual acuteness was the same in each eye, 20-200 and 20 J. barely with plus 3 D. There was a well-marked central scotoma for red and green, densest outside the fixation point.

The optic discs were much too red, margins hazy and striated; to the inner side of the left disc, lying just below an artery of considerable size, was a well marked linear hæmorrhage in either fundus.

He had smoked since he was a boy; for forty

years he had smoked two ounces of Cavendish a week. He habitually drank a good deal. The urine was free from sugar and albumen.

He was ordered to stop the use of tobacco, to wear neutral tint glasses, apply a series of blisters to the temples, and take nux vomica, with an occasional purge.

On June 7 his vision had improved to 20-70, and with plus 3 D. he read 2 J. fairly. The hæmorrhage in the left was still visible, but much faded; optic discs paler and less hazy; the right disc was clearer and paler than the left, and on its upper and outer part were some loops of very small dilated vessels. The left disc was paler than the right, and showed marked white thickening of the sheaths of its descending artery and vein.

On July 5, R. V. = 20-50, W. Do. 5 = 20 40, L. V. = 20-30, not improved by glasses. Ophthalmoscopic examination now showed the discs less alike; the right was very pale at its outer third; the patch of small dilated vessels was still present just above the upper edge of the pale part; the left disc was pale all over, unlike the right.

He had almost given up tobacco, but still smoked two cigarettes a day; he continued to drink as much as usual all the time. Just before he was attacked he took cold and for some days took snuff.

In Volume vii, British Ophthalmological Society's Transactions, we find a series of over 200 cases of amblyopia induced by alcohol or tobacco, or both. Five of these were teetotalers, but used tobacco largely and presented the usual phenomena of central amblyopia. Three did not use any tobacco, but drank alcohol largely. These suffered also from amblyopia, but not *central* amblyopia. The other cases used both tobacco and alcohol in varying degrees, and all presented the characteristic phenomena of central amblyopia. These data would seem to indicate that the tobacco rather than the alcohol was the determining cause of the central amblyopia.

Diabetics who smoke, occasionally exhibit all the characteristics of tobacco amblyopia. Is this due to the tobacco, the diabetes, or to a combination of the two causes? I have observed only one such case. The subject was a clergyman aged 45. The diabetes had existed for a couple of years, but his sight had only failed so that he noticed it for about three months. He was an enormous smoker, and an enormous eater of all kinds of food, though a total abstainer from alcohol. On general principles, I insisted on his giving up his tobacco entirely, and governing his appetite within the bounds of reason. This he did while under treatment, and his eyesight greatly improved, though he died some years afterward from diabetes.

From the considerable number of cases on record I select the following illustrations:

Mr. Nettleship (*Ophthalmic Review*, Vol. ii, p. 23, etc.,) reports four cases of central amblyopia without ophthalmoscopic changes, in patients suffering from diabetes.

1. A man aged 40, who had suffered from diabetes for several months. He smoked half an ounce of tobacco a day. Failure of sight had been noticed for one month. Vision in each eye, 20-100, letters J. 4. Under treatment for diabetes, health improved, but not vision. He would not stop smoking.

2. A man aged 38 had suffered from diabetes three or four years. He smoked half an ounce of tobacco daily. Failure of sight had been noticed for five months. Vision in each eye was 5-200, letters J. 14. He died in the country three months later.

3. A male aged 45 had been the subject of diabetes during twenty-one months. He had smoked during the past thirty years three-quarters of an ounce of tobacco daily. He had noticed a failure of sight for five weeks. Vision was 20-100, J. 16. On examination his urine was found to contain sugar.

Nine other cases are referred to of failure of sight with central scotoma in the subjects of diabetes, without ophthalmoscopic changes. Most of the patients were smokers, and some of them great smokers.

In Vol. iii of the same Transactions, Mr. Nettleship reports eleven more cases of central amblyopia occurring in diabetics who were also users of tobacco. The same volume contains seven other similar cases reported by different observers.

From these and other similar cases found recorded in current ophthalmological literature, I found that the central amblyopia occurring in diabetics who use tobacco, always affects both eyes, that the central scotoma in one eye equals in extent and form that in the other. The fields of vision cover a normal area; the scotomata show a diminished perception of green and red, or an entire absence of the power of perception. The failure of sight begins simultaneously in the two eyes. Mr. Nettleship says that no case is upon record of equal central amblyopia as occurring in a non-smoking diabetic. Mooren, Staffan and others have reported so many of these cases of central amblyopia in diabetics that it would seem to be not so uncommon. Doubtless as the attention of the profession is directed to it more generally, additional cases will be recognized.

But, in the light of our present data, it seems fair to conclude that in the amblyopia of diabetics the efficient causative agent is tobacco, the diabetes acting like bad or insufficient food, mental disturbance long continued, etc., etc.

Central amblyopia does occur in women, but much less frequently than in men. I have never

seen a case in women who only smoked. Twice I have observed it in women who drank as well as smoked to excess. Hutchinson, out of 108 cases of tobacco amblyopia, found but nine women. Dr. A. Hill Griffith (*British Medical Journal*, Dec. 13, 1886,) reports seven cases of tobacco amblyopia in women. It is believed by some observers that the slighter grades of this affection would be found more frequently in women were it looked for more generally. Dr. Griffith says that since the test of central visual field for color has been applied to all cases not fully explained by other methods, he has met a surprising number of such cases. The following cases give us the ground for believing that in women there is no peculiarity in the effects of tobacco upon their vision, and no presumption for the belief that they would escape the disease better than men did they use as much tobacco.

Dr. George A. Berry (*Ophthalmic Review*, Vol. iii, p. 103, etc.) reports three cases suffering from tobacco amblyopia.

Case first was a tramp, who had no regular meals, but made enough by her profession to keep her pipe going. The immediate cause of the tobacco poisoning was that she had been worse fed, and consequently more in the habit of smoking during a period of fasting.

Case second was a woman aged 63 who had smoked half an ounce of "twist" daily for forty years. Nine months before she applied for relief she had lost her husband. This had so distressed her that she could not sleep, and though she had not smoked more, she had been unable to obtain a diet so nourishing as previously and hence often smoked upon an empty stomach. At her husband's death she could read newspaper print, but when tested her vision had been reduced to $\frac{20}{60}$.

Case third was an old servant, aged 57, who was known to have smoked for many years, getting up early in the morning to enjoy her pipe undisturbed in the scullery. Her blindness had come on from two to three months previous to the time she was examined, when the vision with plus D. 1.50 S. was 20-100ths. Latterly she had suffered from sick headaches and an irritable condition of the stomach, and frequently took no solid food for days, smoking while the other servants were at their meals. The ophthalmoscopic appearances in all three cases were confined to slight palor of the temporal sides of the discs.

On the other hand it is said that because tobacco amblyopia occurs more frequently in men than in women, is not necessarily due to the fact that women smoke less than men, for, 1st, men are exposed to greater vicissitudes than women; 2d, they indulge more generally and intemperately in free living.

2. It is urged also that other morbid states may induce a similar state of central amblyopia, as exposure to excessively bright light, etc.

3. If tobacco will produce this state of the optic nerve, why is it that out of millions of smokers, and smokers to excess, only a few hundreds of cases of central amblyopia are observed?

4. Again, it is urged that sight does not always grow worse even if the use of the tobacco be continued.

5. It is also claimed that alcohol will produce this peculiar defect of sight, and that the alcohol is the effective agent in all the mixed cases.

But, *per contra*, it seems that we have good reasons for believing in the existence of a central amblyopia due entirely to tobacco; for, as we have seen:

1. It occurs more frequently in men than in women because men smoke more than women.

2. It occurs in those who use tobacco to the exclusion of alcohol and does not occur in those who use alcohol to the exclusion of tobacco.

3. It gradualy disappears when the use of the tobacco is stopped.

4. In cases in which both tobacco and alcohol are used in excess, the stoppage of the tobacco, the alcohol being continued, is followed by an improvement of the sight.

5. In diabetics it occurs only in those who are excessive in their use of tobacco, and either diminishes or disappears when the tobacco is stopped.

Granting the existence of a tobacco amblyopia, where is the seat of its lesion?

Two views in general merit attention. 1. Von Graefe held that there must be a central disturbance to explain the symptoms. In support of this view is urged: the symmetrical distribution and equal degrees of scotomata in both eyes; the absence generally of any pathological changes in the retina or optic nerve; the nature of the color blindness; the frequent toxic origin of the amblyopia; and its curative nature.

2. In opposition to this Leber believed that the central scotoma was caused by a partial neuritis or atrophy of the optic nerve or some anomaly in the blood supply to the layers of nerve fibres. Bearing upon the solution of this question is the observation of the effect of nitrite of amyl upon the sight of a case of central amblyopia by Mr. George H. Powers (*Med. News*, December 4, 1886). He says that in a case in which the vision was reduced to 20-200ths, within five minutes after administering amyl nitrite the vision rose to 20 40ths. This sudden improvement lasts but an hour or so, but it shows that the loss of sight is due to a lack of blood to the central portion of the optic nerve. It does not enable us to say whether this is localized to the optic nerve or whether it is the result of its action upon the large nerve centres. In two instances I have been able to confirm Dr. Powers' observation.

There are other facts that would seem to connect tobacco amblyopia with retro-bulbar neuritis. Thus, Drs. Nettleship and Edmonds (Transac-

tions of the British Ophthalmological Society, Vol. i, p. 124) report the following: A lean, spare man, æt. 50, was seen for failure of sight. All his life he had been a large smoker, and for two years he had suffered from diabetes. After correcting his presbyopia and hypermetropia his vision in each eye was 20-70ths J. 10. There was but slight pallor of the discs and little haze of the surrounding retina. The fields of vision were normal, but each had a central scotoma in which a bright red spot appeared a faint pink. This area was symmetrical in the two eyes. Though he continued to smoke his sight did not become worse previous to death.

Dr. Edmonds examined the optic nerves after death. To the naked eye there was no evidence of disease. There were no changes anterior to the lamina cribrosa. Posterior to the lamina cribrosa on one side of the nerve was found a tract exhibiting the following pathological changes: 1, atrophy of the optic nerve fibres; 2, increase of the nuclei; 3, thickening of the connective tissue trabeculæ and of the walls of the smaller blood-vessels. In the hindermost sections the affected tract was nearly in the centre of the nerve; farther forward about the entrance of the central artery it approached nearly or quite to the surface of the nerve, affecting a patch which on transverse section appeared wedge-shaped, and from the relation of this diseased part to the central artery at its entrance it was certain that the change was chiefly in the temporal half of the nerve. Again, J. Samelsohn (*Ophthalmic Review*, Vol. i, p. 310) gives a full account of a case of central amblyopia that he was able to study both before and after death. On first examination of the patient a diagnosis of alcoholic amblyopia was made, but later, as abstinence from both alcohol and tobacco resulted in no improvement of vision, the diagnosis of retro-bulbar neuritis was made. At first there was only a small relative scotoma for red and green concentric with the fixation point in each eye. Peripherally the fields were normal. Central acuity was reduced to 15-70ths and 15-200ths. The discs were normal. Two months later the scotoma in each eye had increased in size and the perception of blue was impaired also. The disc margins were all slightly hazy and there was severe pain in the head. Two years later the scotomata had increased in size and were absolute for white as well as for colors, the boundaries not being absolutely determinable. Nothing abnormal was discovered in the blind area of the retina. The patient died of valvular heart disease. Microscopic examination after death showed that posterior to their entrance into the optic foramen the nerves and sheaths were normal in all respects. Within the bony canal the sheaths and vessels belonging to it were normal, but the nerve itself was reduced in size and flattened from above downward. Transverse sections from this part of the nerve showed a peripheral ring of healthy nerve substance, and within this an area of hypertrophied connective tissue with great proliferation of nuclei and increase of blood-vessels, together with remnants of destroyed nerve fibres. On the distal side of the foramen the signs of interstitial inflammation gradually subsided and the affected nerve substance presented the signs of ordinary nerve atrophy, showing that the atrophic changes occurring lower down were secondary, and due to the broken continuity.

The damaged nerve fibres were those connected with the blind area of the retina, the region of the macula. By following them down from the optic foramen to the eye the normal course of the macula fibres was obtained.

Thus it appears that, in these cases, the pathological process underlying central amblyopia is an axial interstitial neuritis, originating at the optic foramen, and leading to cicatricial contraction, and secondary descending atrophy of the nerve fibres.

These pathological changes are identical with those found in the optic nerves of persons dying who before death had exhibited the evidences of tobacco amblyopia, by Drs. Lawford and Edmonds, Vol. ii, Trans. Brit. Oph. Society; by W. Uhthoff in Arch. Oph., Vols. xxxii and xxxiii. As all of these observations were made upon persons who had used both alcohol and tobacco to excess and who suffered from other diseases as well, it is impossible to affirm that these changes were wrought by the agency of tobacco. Dr. Wecker and others strongly urge that the pathology of tobacco amblyopia is a retro-bulbar neuritis. Others deny this identity and urge their denial by the following considerations:

1. The scotomata of tobacco amblyopia are invariably identical in size and form in the two eyes. It would seem unlikely that an inflammatory process in separate nerves should in the separate optic nerves pursue such a similar course as to cause such scotomata.

2. It is difficult to see how an inflammatory process in separate nerves should in all stages of the affection produce the same degree of amblyopia in all stages of the affection.

3. It is hard to see how an inflammation in the optic nerves could confine itself so definitely to the impairment of the functions of one set of fibres. This difficulty is increased when we recall the fact that these same fibres occupy different situations in the nerve at different levels between the papillæ and the optic foramen.

4. How is it that both corresponding nerve fibres and their functions are affected in an equal degree in the separate nerves?

5. It is not denied that a retrobulbar neuritis may exist in connection with tobacco amblyopia, but it is not accepted as proven that the two are identical pathological processes.

From the present state of our knowledge it would seem that tobacco amblyopia was essentially a functional disorder. Possibly this functional disorder may induce an organic change, but more observations are needed to establish this view. It seems certain that it induces its effects through the circulation of the optic nerves. Possibly the tobacco may induce the interstitial changes described, or these may be due to quite different causes. In all cases tobacco amblyopia must be regarded as an idiosyncrasy.

The prognosis of tobacco amblyopia is good provided the patient can be induced to stop or suitably diminish the use of tobacco. All the cases I have observed either entirely recovered or were greatly improved. This coincides with the reports of nearly all observers. Mr. Hutchinson (Ophthalmic Hospital Reports, Vol. viii, p. 459, etc.) gives the results of a study of sixty-four cases of tobacco amblyopia several years after they were first seen. He says a recovery or great improvement took place in forty-eight of the sixty-four cases. A complete cure took place in thirty-one cases. In four cases the disease remained stationary. In seven cases the sight became worse while under care. Five were quite blind when first seen, and continued so.

The cases that came under his care quite early got well completely and quickly. Those of long duration were slower in recovering. Of the forty-eight patients who improved, twenty-six ceased smoking entirely for a time, and thirteen others very much diminished their use of tobacco. Of those who left tobacco for a time, six are known to have returned to smoking more or less after recovery of their sight, and in none did the sight again fail. In some cases the quantity of tobacco had been increased before the sight had begun to fail, in others evidences of greater susceptibility to its influence had attracted the patient's attention. Another class had always been intolerant of tobacco. In several of the cases that did not improve there was either an increased quantity of tobacco employed, or disagreement, or habitual susceptibility. In not one of the cases in which the patient improved did he continue to use his full amount of tobacco. Of the eleven patients that did not improve or became worse, eight continued smoking their usual allowance throughout.

Those in the best of health furnish several of the best and quickest recoveries. Several of this class were either total abstainers from alcohol, or practically so.

What should be the treatment of tobacco amblyopia? Some observers claim that in the anæmic forms of this disease strychnia should be administered, and that in cases of congested optic disc the iodide of potassium should be given. Others affirm that the only treatment called for is simple abstinence from tobacco. Our own belief is that each case should be treated according to the indications found. In every case it is desirable that the optic nerve be supplied, at the earliest possible time, with an abundance of good blood. The indications for the use of strychnia and the iodide of potassium are well stated. But the diet and mode of life should be studied, and the condition of the entire body should be rendered normal by appropriate medicine or regulation of habits, etc.

Questions upon which more light is desired:

1. What influence has alcohol upon the causation of central amblyopia?

2. Is it necessary to entirely suspend the use of tobacco in order to effect a cure of tobacco amblyopia?

3. Does tobacco produce atrophy of the optic disc?

4. What relationship, if any, exists between tobacco amblyopia and retro-bulbar neuritis?

5. What relationship exists between diabetes and tobacco amblyopia?

We have endeavored to show that

1. Tobacco has an especial affinity for a central tract in the optic nerves, and may induce central amblyopia.

2. No other single agent has been shown to induce central amblyopia symmetrical in both eyes, in strictly non-users of tobacco.

3. Some special condition or conditions are required to precipitate an attack, as abuse of alcohol, diabetes, excessive venery, starvation, mental shock, or distress, etc.

4. Some individuals seem to have an especial tendency to optic nerve degeneration, and to these the use of tobacco is especially injurious.

5. Clinically central amblyopia is recognized by its sudden development, by the existence of central scotoma for color in both eyes without limitation of the fields of vision, by the absence of any defect of refraction or recognizable lesion to account for the sudden blindness, and by its occurrence only in tobacco smokers.

6. Pathologically, during at least its earlier stages, it consists of an anæmia of the central portions of the optic nerves. Possibly this may, after a longer or shorter time, induce organic disease, but this has not yet been shown in a case of pure tobacco amblyopia.

Its prognosis is good during the earlier stages at least, if properly managed.

7. Its treatment consists principally in withdrawing the tobacco. Other measures may be profitably employed that promote the local nutrition of the eye and the system in general.

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DR. KNAPP: The lesion underlying central scotoma, consequently also that of this symptom in toxic amblyopia, is, I think, retrobulbar neuritis. Nobody who has seen the microscopic specimens of Samelsohn and Schöler, will doubt

this. Ophthalmoscopically the cases of toxic amblyopia show three varieties according to the stages of the disease. In the first, mild stage, the optic disc looks fairly normal; in the third, last stage there is pronounced general atrophy of the optic disc; in the second stage there is partial atrophy which has a peculiar picture, namely: a triangular temporal atrophy, the white dotted area reaches from the centre to the periphery, the limbs of this triangular atrophy being more or less faded. This very same picture, since my attention was drawn to it by a paper of Sachs' (which will appear in the forthcoming number of the *Arch. of Ophthalmol.*), I have seen it repeatedly quite marked. The very same picture I saw some months ago in one, slightly divergent, eye of a young lady, and when, after dilatation of the pupil, I examined her with the ophthalmoscope, I found an evidently congenital coloboma of the yellow spot. This, I think, is a corroboration of the position of the macular fibres in the end of the optic nerve. These observations have exceedingly interested me, for they enable the ophthalmoscopist to recognize in the living the tissue changes in peripheric neuritis.

DR. CHISOLM, while agreeing with the statement, saw also cases of undoubted tobacco amblyopia where alcohol was not used. He lives in a tobacco growing region and where tobacco is too freely used. A most marked case was one which he had lately reported, that of a lady æt. 40 who had come to him from a distance for treatment. Her bearing and language indicated a person of culture. She said that, being aware that about her age glasses would be needed, she had applied to the optician for aid in vain. Her distant as well as near vision was befogged and she was no longer able to read with ordinary comfort. After a very careful examination ophthalmoscopically and physically he had determined in his own mind that he had to deal with a case of tobacco poisoning, but dared not make the accusation. He however stated that were she a man he could tell at once what was the matter, but in the case of a lady he was altogether at sea. She said at once, "Call me a man and tell me what is the matter." As frankly he said, "You smoke too much." She laughed heartily and said that she did smoke, explaining that she had acquired the habit through persuasion of her husband, who constantly used tobacco. He had also seen cases in ministers who smoked to excess but who abstained from all alcoholic beverages. He had seen one case in which the patient, when accused of tobacco poisoning, laid stress on the fact that he only smoked one-half a cigar a day. Even this small amount made him sick. His amblyopia disappeared when the habit was permanently given up. On previous occasions he had said that he had never seen a case of tobacco amblyopia from chewing alone. Recently he had had occasion to modify this statement, as he had within the past three months been consulted by two gentlemen who did not smoke, but who had long been in the habit of chewing tobacco all day long and only had their mouths empty when at meals and during sleep. These cases show that tobacco alone can produce amblyopia. All got well when tobacco was abandoned permanently.

DR. ADOLPH BLITZ, Indianapolis, Ind.: I remember a case of tobacco amblyopia which occurred in my practice some fifteen years ago. The patient was a woman about 35 years of age, who lived in the mountains of Tennessee, whose vision gradually failed for some weeks, but during the three days before I saw her, she became blind to such an extent that she could only distinguish between daylight and darkness. She could not see to walk and had to be led into my office. I made a thorough ophthalmoscopic examination of the eyes, but as I now remember, found no lesion, and was at a loss to account for the loss of vision. While I turned to speak to her husband and the physician who brought her case to me, I noticed that the woman took from her pocket a small tin box and a little stick, which latter she dipped into the tin box and then carried it to her mouth and chewed it. Alert to anything that I could learn about her habits, I asked her what she had there. She said, "Oh, only some snuff." This was something new to me, as I had never seen snuff thus used before, although I had heard of it. I knew then the cause of her blindness. To my question how much of the snuff she used during the day, she told me, but I do not now remember the quantity, though I remember it seemed to me large. I told her that she must stop the use of the snuff entirely if she wanted to regain her vision, explaining to her that the snuff was the entire cause of her trouble. She did as I told her, and under the use of strychnia and electricity vision returned in about a week, and in about six weeks was entirely restored.

DR. NOYES, of Detroit, said: Dr. Connor's interesting paper just read is one of great importance. Cases of tobacco amblyopia came under my observation early in my practice—but in most cases the victims were hard drinkers, so it was difficult to say to which excess to lay the blame of failure of vision. A typical case of this sort now occurs to me. A middle-aged man from Canada consulted me on account of great failure of vision which had been troubling him for a long time. He was unable to make out the largest letters of Snellen Zeit type. His appearance plainly showed him to be a whisky drinker. In answer to my questions he said he drank heavily and smoked a pipe all the time. His habits had so firm a hold upon him that his case appeared to me hopeless. No examination was made with the ophthalmoscope of his eyes. He was advised to leave off both drink and tobacco.

Two cases also of failure of vision occur to me from excessive use of tobacco. One was a clergyman who had been presented with a very fine meerschaum pipe which he had been smoking almost incessantly in order to color it. With failure of vision he was troubled also with palpitation of the heart with syncope, which greatly alarmed him. Upon following my advice to quit his smoking his vision returned. The other case was a tobacco manufacturer, also of middle age. He was a great smoker of cigars of the best quality, using as many as twenty or thirty daily. His failure of sight led him to consult me. I advised him to give up his cigars and all use of tobacco. His vision at once improved and became normal.

Dr. Myles Standish: Several years ago I reported in detail a case of tobacco and alcohol amblyopia which was followed, as the patient persisted in his habits, by an alcoholic multiple neuritis. At that time I suggested that in all probability the amblyopia was also a peripheral neuritis. Since that time it has been my fortune to see three more cases of amblyopia *ex abusu*, in which the excess was not subsequently moderated, and which about three months later was followed by an alcoholic peripheral multiple neuritis. In two of these cases there was present a very noticeable whitening of the greater portion of the temporal half of one nerve at least. At the time I reported the first case I looked up the literature of alcoholic multiple neuritis and found that in the report of a number of cases reported by Dr. —— in which the eyes were examined, the sight was found diminished, and the note was also made that in several cases the temporal halves of nerves were remarkably white. It is my opinion that cases of toxic amblyopia, whether due to tobacco, alcohol or lead, are undoubtedly a part of a peripheral multiple neuritis which, unless the toxic agent is stopped, may appear in other nerves.

Dr. E. J. Gardiner reported a typical case of tobacco amblyopia occurring in a clergyman, a total abstainer from liquor. The characteristic pallor of the temporal half of the disc was noticed. The patient recovered after treatment by hypodermic injections of $\frac{1}{3}$ gr. of strychnia every other day for four weeks.

Dr. Keyser said he believed that it was not always the amount of tobacco used that caused the defect, and that he would call attention to the case of a young man who called upon him in relation to failing vision, and on examination he could find nothing but suspicion of tobacco amblyopia. But upon questioning the patient said that he had been trying for a long time to smoke, but invariably nausea occurred on every attempt. He has tried weak and strong cigars with the same effect. He still persevered daily in the effort, thinking that was the only way to become a smoker. On desisting from any further attempt to use tobacco he recovered entirely. He did not drink any alcoholic liquor of any kind. This case shows that it is not the quantity of tobacco used that causes this disease, but as in this case, the tobacco may act as a peculiar irritant to the stomach—the brain subsequently becoming affected. In other words, there was in the case cited an idiosyncrasy against tobacco.

SOME THOUGHTS ON THE ETIOLOGY, PATHOLOGY AND THERAPEUTICS OF PHTHISIS PULMONALIS.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Every physician has measured swords with this Prince of Destroyers, and with all it has too often proved the victor. In every age it has been carefully studied by the best minds in the profession, yet only the nostrum vender fully comprehends its methods and cure.

Truth is many-sided. Diversity in unity in the world of matter and of spirit is the thought of God. The mind of man, or the medium through which it acts, impels different investigators to follow different lines. Their eager search and earnest faith in their own methods may narrow their vision, but all is evolved that lies in the direction of their search. The impartial collaborator unifies their results, and truth is revealed.

It is generally agreed that phthisis is the consequent of a constitutional cachexy, which may be hereditary or acquired—not the disease, but the organic elements which, under certain conditions, are prone to the development of tubercle—and that when the predisposition exists and the conditions are favorable, we have tuberculosis. All, however, do not agree upon its etiology and pathology. Until these are solved we cannot hope to find a rational treatment, preventive or curative. The predisposition or constitutional taint lies in the elements from which the tubercle arises. While there is some diversity of opinion as to the particular structure from which it springs, it is generally conceded that it originates in connective tissue. Fothergill says that "connective tissue is primitive tissue from which higher tissues are evolved.[1]" Whether its cells, like the embryonic cell, are capable of evolving physiologically higher types of cells is, perhaps, doubtful, but under degrading influences they are prone to differentiate lower types of pathological cells. From this tissue, normally abundant throughout the body, and formed wherever through inflammatory processes albuminous effusion occurs, springs nearly all the neoplasms.

[1] Handbook of Treatment, p. 192.

Tubercle is a neoplastic growth, and the tubercle cell is a pathological connective tissue cell, or possibly, as some distinguished pathologists assert, an infiltration of lymphoid cells in the aventitia of blood vessels, or small nodular masses of lymphoid cells around or within blood vessels or ducts.[2] But whether the tubercle arises from the connective tissue or from the lymphoid cell —the white blood corpuscles produced by the lymphatics—let us see, if we can, what constitutes the predisposition to its differentiation. Whenever connective tissue approaches an embryonic type, is rich in nuclei and young cells, an exhausted vitality, from whatever cause, leaves this immature plastic cell growth devitalized and prone to retrograde metamorphosis, and the new cells are, according to Virchow, "a pitiful production, from their very outset miserable." Like all the lower forms of life, they substitute rapidity of proliferation for perfection of development. Their rapid reproduction presses them one against another and they form a tubercle. The pressure strangulating the circulation at the centre, the central cells are devitalized and soon degenerate into a shrunken, cheesy mass, the cheesy transformation being often followed by purulence. While this is the common course, the result varies with the extent of degradation, and reaches its acme in the milliary tubercle, where, through their rapid proliferation, the cells are detached and carried through the lymphatic vessels to other locations. The more degraded the cell, the more dangerous the disease.

Where there is defective nutrition, or vital deterioration from any cause, in those who inherit or acquire a facile type of connective tissue cell, it is prone to differentiate the lower type of tubercle cell; but why this specific differentiation, is, perhaps, as inscrutable as the physiological differentiation from the embryonic cell of the various cells of the body. But the fact that embryonic cells do thus differentiate on and up to all the parts of the perfectly developed animal makes it less wonderful that some of their offspring, under given influences, should differentiate pathological cells, the pathological structures being only physiological diversions. While we may not know why special deteriorations occur, the influences that lead to them, their etiology is less obscure. We know that any cause sufficient to produce vital deterioration beyond a given point will cause the development of tubercle where the predisposition exists. The amount of deterioration is, however, by no means a fixed quantity, but varies with the predisposition. Yet the neoplastic growth never develops during robust health. Exhausting fevers, inflammatory processes, syphilis, excess of venery, pregnancy, lactation, corroding care, any cause that lowers vital action, especially when increased by unsanitary surroundings and climatic vicissitudes, tends to tubercle.

Catarrh, bronchitis and pneumonia have been considered causes of consumption, but it does not arise directly from inflammatory processes and it is doubtful whether any cause beyond innutrition and vital deterioration is necessary to its development. Without lowered vitality, general or local, there is no tuberculosis.

The contagiousness of phthisis is said to be *sub judice*. An epithelial cell may be transplanted, as in skin grafting, and on favorable soil, with favorable surroundings, will proliferate. So it is not impossible that a tubercle cell, that can be transplanted through the lymph or blood vessels may be transferred from lung to lung; but this we think is the extent of its contagiousness. Each individual cell possesses an individual life, and where we find a cell there must have been a progenitor. It is as impossible for a cell to construct itself out of non-cellular matter as it is for an alga or an animalcule, a mastodon or a man, to build itself out of formative material. We know no life *de novo*.

From the time of Hippocrates there have been believers in the contagiousness of phthisis, and a large number of cases have been collected that seem to confirm the doctrine, but compared with those that have escaped contagion where the closest human relations have existed, they are far too few to establish any law, and a humane profession will not ostracise the unfortunate consumptive and deprive him of the sympathy and assistance of friends without further proof. The proof is too like that of the patent medicine man who hunts up the exceptional cases that get well and omits the hosts that die. Its contagion is certainly unlike that of variola, cholera and yellow fever, which do not occur independent of contact, and which do occur, in the unprotected, on contact. The history of such hospitals as the Brompton, London, and the Brehmers, Görbensdorf, as well as the observation of the million, show its contagiousness or portagiousness exceptional if not *nil*. Since the promulgation of the germ theory of disease, the theory of contagion has received a fresh impulse, not from any proof of contract through contact, but because of the bacilli found in dead tubercle cells, it being assumed that the bacilli are a *contagium vivum*. Animals and vegetables, microscopic or otherwise, have their habitat and their significance. Every specific degeneration has its dead tissue and doubtless its specific microbe. In the cell death incident to the tubercle, the bacillus tuberculosis finds its proper nutriment, and it may be the ferment that changes the caseated cell into putrid, semi-purulent matter.

We have before us the results of many experiments, by distinguished scientists, with microbe cultures. With all due respect for those by

[2] H. F. Formad, paper before the Phil. Med. Soc., 1883.

whom they were made, they have never created a tubercle cell or tuberculosis. By taking animals strongly predisposed to tubercular degeneration, placing them in unnatural confinement and on unusual diet, and injecting microbe cultures, it is alleged they have demonstrated the contagium of phthisis. With such animals and such surroundings, we may safely predicate phthisis after the injection of any ferment, or from substances, as pulverized glass, that are not ferments, or without any injection. A specific ferment must produce a specific disease and nothing else, and a specific disease must be caused by a specific ferment, and by nothing else.

When the animals have been inoculated with the "culture" and permitted their accustomed liberty the experiments have failed, and they have failed with the unnatural surroundings in animals in whom there is no strong tendency to the disease.

The argument for germ causation is: "It seems to be established that the so-called bacillus tuberculosis is uniformly present in tuberculous products and as uniformly absent in other products, that it is generally present in the sputa of phthisical patients and never present in the sputa of non-phthisical patients, and that tuberculous disease in animals may be produced by inoculation with the organism after cultivation has been sufficiently continued to eliminate all else pertaining to the tuberculous product. On these data are based the conclusion that phthisis is an infectious disease—in other words, that it involves in its causation a specific agent capable of self multiplication; that it is a communicable disease, and that the agent of communication is the bacilli tuberculosis; that is, this agent is contagium. The supposition that the bacillus is secondary to the tuberculous affection is not tenable, in view of the fact that the affection is produced by this organism after it has passed through several generations of culture out of the body."[3]

Distinguished as is the authority from whom we quote, the bacillus is not universally present, and, as a rule, not present at the beginning of the disease, and it is not always absent in other products. It has not been proven that the introduction of this organism, either before or after culture, is uniformly followed by phthisis, or that the disease produced in the lower animals is identical with phthisis in man, as has been fully demonstrated by the experiments of Formad, Sternberg, Truesdale and others. To make this theory sustain itself, its advocates must not only explain away results and the absence of results, and similar results produced by pulverized glass, etc., but must go back to the theory of Lænnec, that it is a special growth, unlike any other tissue; or of Carswell, that it is a secretion *sui generis*, disproved by the rational teachings of Virchow and Niemeyer. Certainly there is abundant proof that, as a rule, the dead cells precede the microbe, and the dead cells can arise from no other source than the tubercle cell. Virchow has truly said: "No form of morbid growth arises which cannot in its elements be traced back to some model which has previously maintained an independent existence in the economy."

The pathology of Virchow has been demonstrated, and that of Lænnec and Caswell disproved. Dr. Formad thinks Koch has taken a consequent for a cause. He says: "Koch has discovered that tubercle tissue is infested with bacilli, and this is correct; but this tubercle tissue is not created on account of or caused by the bacilli. These organisms invade the tissue wholly because it is a culture medium favoring their development." Prior to the cell death bacilli are not found in tubercle more than in the lung tissue before its differentiation.

The advocates of the germ theory tell us "our bodies outside, and especially inside, are covered by or contain billions of bacteria. All these microbes may become injurious under certain conditions. With certain kinds of bacteria the animal cells carry on a constant 'fight for life,' while others, more deadly, destroy cellular elements at an early date, in spite of resistance;" and that "all the competent men the world over, who have searched and studied the subject experimentally, have come to an almost unanimous conclusion—and they form a colossal array of intellect—in support of the much praised and much abused germ theory."[4] Truth is not demonstrated and science not established by a "colossal array of intellect." Only a few years have elapsed since all the world believed "the Lord made the heaven and earth, the sea and all that in them is, in six days." In the formation of tubercle, "cellular elements" are not destroyed in their "fight for life" with the more deadly bacteria, "in spite of resistance," but are merely degraded to a lower type, and that regardless of the presence or absence of microbes. Nor is the theory as stated by Dr. Phillips in a paper read before the last International Congress any more tenable: "Phthisis is the consequent of the bacilli tuberculosis, whose fatal consequences are in all probability attributable to a power possessed by them in elaborating new products, which are afterwards absorbed." The premises granted, the probabilities may be as you like.

The investigations and conclusions of Pasteur and Kohn and Koch created great expectations in the treatment of disease, and especially phthisis, the opprobrium medicini, and many members of the profession made earnest search for specifics. They administered their agents with intent to destroy the pathogenic germ. In the treatment of

[3] Austin Flint, M.D., System of Medicine by Pepper, Vol. iii, p. 399.

[4] Paul Paguin, Kansas City Medical Record, July, 1888.

phthisis they loaded their syringes with germicides and emptied them in the cellular tissue, the circulation, the lung, the tubercle, and finally into the rectum, hoping, it would seem, to steal a march on the enemy by the postern gate. The last treatment, instituted by Bergeon, which "went up like a rocket and came down like a stick," illustrates how prone we are, in the solution of vexed questions, to jump at conclusions and adopt means wholly inadequate to the end, In the first volume of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for 1887 we find four articles and several editorials commending the "treatment," and one, by Dr. Lynch, of Baltimore, condemning it, and he was severely criticized by the learned and practical editor of THE JOURNAL, who said: "It was with some surprise that many members of the Association heard the Chairman of the Section on Practice of Medicine, in his address last week, utterly condemn the Bergeon treatment. The method seems deserving the most thorough and extended investigation."[5] The hopes entertained when the germ theory of disease was enunciated are amply illustrated in this treatment.

The ardent search for specific germicides has called forth this query from one of the greatest of living physicians, Dr. B. W. Richardson: "What have we done to be visited in the heavens above, in the earth beneath, and in the waters under the earth, with this *pestis bacilorum*, which is now regnant?"

If germs created tubercle and we could administer germicides of sufficient strength to destroy them without first destroying the patient, would not the tubercle remain and the question be *cui bono?* An account of the remedial measures employed for the cure of phthisis would fill volumes. Since Koch's discovery of the tubercle bacillus they have generally been leveled at the germ, and even in the recent treatment of phthisis by the inhalation of hot air, which promises well, many seek its *rationale* in the destruction or hindered development of germs. As well say that we crush germs in the movement cure, as that we scald them in the hot air treatment. Dr. Wm. Porter, of St. Louis, has well said: "No practical gain has been made based upon the hypothesis that the microbe is the factor *per se*. So far as our present knowledge extends, the bacillus is to phthisis as smoke to fire: it may indicate its existence, yet neither incites nor intensifies the combustion."[6]

Phthisis being a disease of hereditary or acquired tissue degeneration, its rational treatment must lie in tissue restoration, in the use of such measures as will arrest retrograde action and, if possible, restore the degraded cells to their normal condition. Dr. Joseph Jones, of New Orleans, La., says the remedies of the greatest use appear to be cod liver oil, phosphates and hypophosphites of iron, zinc, sodium, potassium, strychnine and the bitter tonics.[7] For a clear statement of a rational treatment we may well refer to "Fothergill's Handbook of Treatment," pp. 199–212, and fully endorse it: "Every case has its own peculiarities and its own exigencies, and must be studied in detail." No routineism, whether with germicidal intent or otherwise, can lead to victory.

If the importance of an easily digested oil in the treatment of phthisis, preventive and curative, required emphasis, we need only refer to the "blubber"-eating people of Greenland, Lapland and Iceland, where consumption is never indigenous, and where, when imported, seldom extends to the second generation.[8] Yet in these countries all the conditions that tend to the disease are present—a low altitude, a damp atmosphere, and a most inhospitable climate; homes, if not built beneath the earth, usually built of earth, innocent of ventilation and cleanliness, with their occupants packed together like sardines, that they may maintain the greatest possible bodily warmth.[9]

The absence of fat tends to tuberculosis. Its presence tends to arrest and restore tuberculous degenerations. How, we may not know but, in some way it facilitates metamorphosis, aiding both in the removal of effete matter and in building up degraded tissues. Thus we find tubercle developed in cattle and sheep by starvation through the winter in process of repair after the summer's fattening. Chambers, in his admirable little volume on "The Indigestions," says of oil: "It is itself the material by which life is manifested. Under its use beneficial influences are exerted throughout the whole body. Old wounds and sores heal; the harsh, wrinkled skin regains the beauty of youth; debilitating discharges cease, at the same time the normal secretions are more copious; the mucous membranes become clean and moist, and are no longer loaded with sticky epithelium; the pulse becomes firmer and slower, that is to say, more powerful, for abnormal quickness is always a proof of deficient vitality. Such are the effects, perfectly consistent with physiology, of supplying a sufficiency of molecular base for interstitial growth. To find the easiest assimilated oil, and to prepare the digestion for the absorption of oil, are the main problems in the cure of consumption."

As an important corollary to this we should insist upon the cultivation of a taste for fat, especially in children of a consumptive heredity. Alcohol has been commended as *the* hydro-carbon in the treatment of phthisis, the argument being

[5] Journal of the American Medical Association, June 18, 1887.
[6] Medical Bulletin, Philadelphia, March, 1888.
[7] Journal of the American Medical Association, March, 1886.
[8] "Consumption as a Contagious Disease," by Dr. Rumbold, 1880.
[9] "The Homes of the Edas," by Warreford S. Low, 1879.

that "experiment has shown that the combustion of one grain of alcohol raises the temperature of water 1° centigrade. Cod liver oil in the same quantity brings to a like degree of temperature seven litres of water. Hence, the relative heat-producing powers of alcohol and the well-known nutrient oil are as three to four." In the prevention and cure of phthisis oil does more than produce heat, and if it was otherwise, physiological chemistry does not prove the body an alcohol lamp. In all the alcohols and ethers hydrogen is greatly in excess of oxygen. In ethytic alcohol we have C_2H_6O. Such compounds demand oxygen at any cost. When introduced into the body, either by inhalation or imbibition, instead of oxydizing, they deoxydize the blood and tissues; instead of increasing, they decrease metamorphosis and the generation of heat; instead of generating nervous force, they produce anæsthesia. The demand of the body for an oxydized blood increases the frequency of the heart's action, but through want of energy from want of oxygen the rapidity of debility is substituted for force. Vital metamorphosis is diminished and vital heat decreased. In all treatment we must strive to improve digestion and assimilation, and we can not renew tissue without the removal of that which has become useless. Alcohol "pickles" the tissues; oil aids in their removal and renewal.

Prof. Jaccoud, than whom we have no better authority, in his work on "The Curability and Therapeutics of Phthisis," considers the disease curable in all its stages—not all cases, but curable as are other diseases. In all treatment he relies largely upon the influence of climate, adapting its conditions to the individual case. Notwithstanding Jaccoud's dictum, there are widely differing opinions as to which is the best climate; thus, we find the balmy air of sea-surrounded Orotava praised, the soft warm breezes of St. Augustine, Fla., the fragrant odors and almost tropical warmth of the Louisiana pine-belt, the high cold climate of Colorado, and the damp and chilly atmosphere of lake-girt Michigan.[1] As these widely differing opinions seem but the varied notes of "Home, Sweet Home," we must consider principles and statistics.

Before we can give intelligent advice to invalids we must understand the various elements entering into and producing what we call climate, and their impress upon life, as thoroughly as the etiology and pathology of disease. Webster defines climate as "the condition of a place in relation to the various meteorological conditions, as temperature, moisture, etc."

Climates are mainly created and influenced by latitude, topography, superficial strata and the presence or absence of large bodies of water, and are the aggregate of atmospheric conditions of particular localities at specified seasons. The chief elements to be considered in climatic treatment are: 1, purity; 2, rarefaction, as produced by altitude; 3, dryness; 4, temperature; 5, variability; 6, sunlight; 7, electricity; 8, atmospheric motion. The first and second elements are chiefly influenced by altitude, the others by latitude, configuration, and porosity of the surface and relation to bodies of water.

Dr. Dennison advocates the "dry, cool, rarefied, stimulating and sunny atmosphere of Colorado" because, among other reasons, "cold stimulates and heat depresses." Is not this as fallacious as the Thompsonian dogma, "heat is life, and cold is death?" A limb mutilated beyond hope of recovery is restored through the stimulus of hot water dressings, and a frightful post-partem hæmorrhage is arrested by the stimulus of hot intranterine injections. "*In media tutissimus ibis*" must be one rule in selecting temperature for the consumptive. An atmosphere that stimulates through altitude, and yet woes to out-door life, is most favorable for the prevention and cure of phthisis. It is not the heat or the cold that tends to cure in phthisis. Robust health may endure an inhospitable climate, but such a climate does not produce robust health in those of marked tuberculous heredity; while in damp air, cold or warm, containing less oxygen than dry air, which is absorbed less readily from the moist membrane, there is diminished oxydation of the blood engorgement of central organs. Dr. D. thinks nightly chilling and sometimes freezing renders the atmosphere "inimical to germ life." We don't know so much about the health of the germ, but we know such conditions are inimical to human health.

Whether from the direct effect of abstraction of moisture from the pulmonary tissue, or the consequent control of pulmonary temperature, or other cause, a dry atmosphere is essential to climatic treatment. Change in temperature, when the range is not too wide, may not injure vigorous life; but the alternations of temperature, the hot days and cold nights, so common in all damp climates, leads to engorgement of central organs —spleen, liver, kidneys, lungs,—to periodic and congestive fevers, to lowered vitality and to consumption, wherever the predisposition exists. Damp, hot days and damp, cold nights produce directly opposite results to dry, high altitudes, where external tissues are hyperæmic and internal organs anæmic. Cold condenses the atmosphere. In cold weather, at low altitudes, the full use of the pulmonary tissue and circulation is not required, and there is tendency to atony and the tubercle cell. In simply cold climates, of whatever altitude, sudden and extreme changes fall heavily upon the exposed lungs, and such changes cannot be avoided. Much of the time must necessarily be spent in artificially heated rooms, too often illy ventilated,

[1] Transactions International Medical Congress, Vol. v.

between which and the out-door air there is a difference of many degrees. It goes for the saying that the advantage of climate is the climate, and not the heated air of the living-room. A climate that permits and invites out-door life is a necessity to satisfactory climatic treatment. Cold and rain confine the patient in-doors; a warm, moist air tempts to indolence, and a hot, dry air leads to idleness and the shade, while a high, dry air of vernal temperature stimulates to out-door life and exercise, and so fills all the conditions of climatic treatment.

Climatic treatment is based upon more rational grounds than the destruction of germs. In an atmosphere rarefied by altitude the pressure upon the surface of the body is diminished and the vessels of the periphery are turgescent, while the viscera are comparatively anæmic. The pulmonary circulation freed from hyperæmia, congestion and obstruction, tendency to hæmorrhage is prevented or relieved, respiration is full and free, the cerebro-spinal functions are more active, the great central glands relieved of remora and congestion, effete matter is more thoroughly removed, the appetite, digestion and nutrition are improved, the desire and capacity for exercise increased, and we begin to feel

> "The wheels are just as strong as the thills,
> And the floor just as strong as the sills,
> And the panels just as strong as the floor,
> And the whippletree neither less nor more,
> And the back crossbar as strong as the fore,
> And the spring and axle and hub encore."

The "hardy mountaineer," with his physical and mental activity, does not owe all his growth to mountain scenery, but illustrates the beneficial effects of altitude. The rarefied atmosphere and the relative anæmia of the lungs, other things being equal, demands and permits full draughts of air, while the brain and all the great vital organs, permitting an unobstructed circulation of the vital current, tissue degradation and deterioration are prevented or relieved.

Prof. Jaccoud says: "Mountainous climates at the height of from 4,900 to 6,200 feet have in reality a double effect: Firstly, a general one, by which the constitution is restored to a healthy condition; secondly, a local one, by which the activity of respiration is increased to a maximum, while the lung is protected from the effect of congestion and hyperæmia. Climates which, on account of their more northern latitude, present analogous conditions of temperature at a lower altitude, produce the same tonic effect. They have not, however, the same mechanical influence upon the lungs, this being entirely due to barometric pressure. Climates with moderate pressure are wanting in the mechanical action of rarefied atmosphere, and there is insufficient tonic and fortifying effect; nor do they possess that special purifying effect peculiar to high altitudes; they therefore fulfil only secondary indications—secondary in themselves, or at the time when they occur. While such climates have no curative effects on the disease and are not preventive of fresh tubercle, they may, on account of having a temperate, or warm, fresh temperature in winter, act favorably upon any preëxisting bronchitis or pulmonary catarrh. Confinement within doors is unnecessary, and much of the time may be spent in the open air without danger of provoking bronchitis or pneumonia, which would not be the case in a more rigorous climate, or one having greater variability of temperature. It is thus seen that climates of the second class, while of an undoubted value in the treatment of phthisis, are only of secondary importance."

Altitude in any latitude that does not permit to the consumptive out-door life loses much of its advantage. If we can find a locality with a comparatively dry atmosphere which at 4,000, 6,000, 8,000 or 10,000 feet will permit patients to live largely out-of-doors, they will at the same time get the benefit of barometric pressure, climate and healthful exercise. Though not a resident of New Mexico, its barometric pressure will range from 4,000 to 10,000 feet, with a climate that will permit and stimulate out-door exercise, with which its hygrometric conditions will rarely interfere.

The damp, cold climate of lake-encircled Michigan is excellent for consumption, but bad for the consumptive, and its statistics prove what science teaches. According to the census reports of 1870 and 1880, it has a higher death-rate from phthisis than any other inland State in the Union. Of its deaths in 1870, 16.4 were from phthisis, and in 1880, 13.2.

In the States lying upon and near either ocean in the northern portion of the United States, notwithstanding their altitude, we have the highest death-rate from phthisis, the acme being reached in Maine, where, in 1870, 25.6 of the deaths were from consumption, and in 1880, 19.2; in New Hampshire they were 22.2 in 1870, and 15.7 in 1880; in Massachusetts, 19.9 and 15.7; in Connecticut, 17.9 and 19.2; in Rhode Island, 20.1 and 14.7; in California, 13.8 and 15.6; in Oregon, 18.2 and 12.1.

The warm, damp air of the Gulf States, with their lower altitude and higher temperature, give much more favorable statistics than those somewhat similarly situated as to moisture, but with more rigorous climates. Thus, the percentage of deaths from phthisis, as shown by the census of 1870 and 1880, were 5.7 and 8.0 in Georgia; 6.4 and 8.0 in Alabama; 7.0 and 9.0 in Mississippi; 7.0 and 8.2 in Florida, and 7.7 and 8.2 in Louisiana.

Colorado and Nebraska, so highly lauded for the influence of their climate on the consumptive, show by the same census a slightly larger pro-

portion of deaths from phthisis than the low-lying but warm States on the Gulf of Mexico. Thus, in Colorado 8.5 and 8.2 were from phthisis, and in Nebraska, 8.7 and 7.0. In New Mexico the deaths from phthisis are given in 1870 as 3.8, and in 1880, 2.5, and in Arizona, 4.0 and 6.9, and this where the native population suffer largely from a specific disease that tends to a type of phthisis.

From the view we have taken of the etiology and pathology of phthisis, as well as from statistics, we conclude that a sanitarium for consumptives in New Mexico, away from the hot springs, with their excess of moisture, upon an arroyo of 4,000 or 5,000 feet above the sea, with cottages extending up the mesa to 10,000 feet, permitting patients to be moved up or down, as their condition permits or requires, will secure to the consumptive all possible climatic advantages and make for them the most perfect retreat known to any country or clime.

Yet we must remember that in all climatic treatment we must "temper the wind to the shorn lamb." In the flat and narrow chest, in tuberculous deposit confined to the apex, or yet more extensive if the purulent stage has not been reached, altitude, high, dry and equable, with a climate that encourages out-door life, is positively preventive and curative, not in a day or a year, but continued until the cure is complete. When caseation and softening are more extended, a mild, dry and pure atmosphere is required, such as may be found in the lower altitudes of New Mexico and in the Carolinas, Tennessee and Georgia. When the tuberculous deposit is extensive, expectoration copious, hectic marked and emaciation extreme, the probabilities of cure are so small that the pleasures of home, where love may make the dying bed "soft as downy pillows are," should not be exchanged for an arduous journey to end in a final struggle away from the comforts and consolations of home and friends.

DISPOSAL OF HOUSE-REFUSE.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ALFRED LUDLOW CARROLL, M.D.,
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Household life necessitates the deportation of several different kinds of refuse matter, consisting of excremental substances, liquid wastes from the kitchen and the laundry, baths and basins, garbage, sweepings and dust of various sorts. As regards the first of these, the average for each individual is 57 pounds of fæcal excreta and 114 gallons of urine annually; or, for a family of five persons, 285 pounds and 570 gallons respectively. The danger from these is not when they are freshly voided, but after decomposition has set in, favoring the evolution of noxious gases and volatile products of putrefaction. Where atmospheric oxygen has free access, the principal results of decomposition are ammonia, carbonic acid and water; but in large accumulations, where air can not thoroughly penetrate, deleterious compounds are generated, bacterial ferments multiply, and ptomainal products are given off in increased quantity. An additional peril arises where the intestinal discharges are impregnated with the virus of specific diseases, such as cholera, enteric fever, and probably other diarrhœal maladies, though even in this case it seems to be requisite for the development of the contagium that decomposition shall have reached a certain stage. When urine is mixed with fæces, fermentation occurs more rapidly and with greater evolution of volatilized organic products. For these reasons it is of prime importance that such matters be removed from any possibility of communication with the interior of the house, or of its inmates, before they shall have time to decompose; that is to say, for practical purposes, within twelve hours.

But a grievous mistake, made by many engineers and by some superficial writers on hygiene, is to consider the intestinal and renal dejecta as the only things to be cared for, whereas in reality they constitute less than one per cent. of the offensive residua which should be speedily removed from inhabited places. The feathery masses of decaying epithelium from basins and baths, or the organic scourings from soiled clothing, not only afford fertile culture media for microzymes, but are often specifically infected; the culinary outpourings are virtually weak organic broths, responding readily to inoculation; indeed, all the water supplied to the domicile is discharged in so fouled a condition that prudence forbids its retention on or about the premises. There is little difference in the sewage of towns whether excremental matter be admitted or excluded, and in populous communities where "dry methods" are used it is found necessary to construct sewers in addition. Liernur's pneumatic system and other schemes based upon the single view of the manurial utility of undiluted excreta are open to the same objection.

If the arch-enemy of mankind had been asked to suggest the most mischievous method of dealing with these waste products, he could not have devised a more diabolical one than that which is commonly adopted, not alone in sequestered rural regions, but in the majority of villages, and which lingers as a relic of barbarism even in many cities, to wit: the storage of them in pervious privy-pits and cess-pools, whence the festering liquefied filth permeates the soil over a wide area, polluting the surface wells which are usually in convenient proximity, and poisoning with its noxious exhalations the ground atmosphere which is drawn into the basements of ill-constructed houses.

Of the various plans for the "dry disposal" of excreta, the simplest is admixture with dry earth or sifted coal-ashes, using either a shallow cemented pit, a box, or other receptacle above ground, or one of the more elaborate patterns of earth-closets. While this may be practicable for single houses or for very small hamlets, the difficulty of carrying it out on a larger scale is almost insurmountable. It is estimated that for a population of 10,000 more than a hundred tons of dry earth would be required weekly, and the supply and removal of such a quantity would involve expensive machinery. It is an error to suppose that the fertilizing quality of this earth after use will compensate for its transportation. Even when it has been redried and used several times it is no richer than ordinary garden soil, and is absolutely worthless as manure. It many places abroad the tub or pail system is employed with more or less satisfactory results, movable vessels receiving the excreta with or without the admixture of ashes, chaff, or other absorbent or deodorizing substances, and being removed once a week or oftener by the public authorities, the more voluminous remainder of the sewage being reserved for irrigation or "intermittent filtration."

In rural or suburban districts, where there is a reasonable amount of ground about the house, with grass or a small garden plot, liquid wastes may safely be distributed on the surface; not poured persistently in the same spot, after the manner of the average handmaiden, to create an artificial swamp close to the foundation walls, but scattered thinly and alternately over a wider extent of growing vegetation. A piece of land 20x 25 feet will amply suffice to utilize all the "slops" of an ordinary household, if due regard be paid to their distribution, avoiding, of course, the vicinity of the well, if the water supply be derived from this source. A neater but costlier plan is "subsoil irrigation" through a branching system of loose-jointed small drain pipes, laid about a foot below the surface of the ground, so as to distribute their contents within reach of the roots of plants. To render this method effective it is almost essential to collect the sewage in a tank with an automatic mechanism for discharging at stated intervals, since a continual trickling would fail to flow to the terminal branches, and without preliminary subsidence the suspended solids would be apt to clog the pipes in a sluggish current. Too great a descent, on the other hand, will carry all the discharge at once to the farther end of the drains, thus thwarting the purpose of uniform distribution. The proper grade for pipes in this system, according to Col. Waring, who is one of its strongest advocates, is not more than 6 inches in each 100 feet. Beyond the æsthetic consideration of putting things out of sight, this subsoil system has no special advantage over surface irrigation; indeed, where large quantities of sewage are to be dealt with the latter is preferable, if it be intermittent. For both methods perviousness of the soil is a pre-requisite, and a clayey or other moisture-retaining ground should first be thoroughly underdrained; for it is to be remembered that the purifying power of "dry earth" resides not in the earth itself, but in the air contained in its interstices. It is an accepted belief that the bacilli of "nitrification" have their usual field of action in the uppermost two or three feet of a fairly pervious soil, while at a greater depth those which preside over mischievous putrefactive processes predominate. This limitation, however, cannot be arbitrarily fixed, since it depends upon the depth to which the soil is aerated, and in a water-logged earth it may be confined to a few superficial inches. In properly selected or prepared ground the water of sewage (if not too profusely applied) filters downward, leaving its suspended and most of its dissolved matters to the ventilated laboratory above.

A desire for all attainable "modern improvements," conjoined with the imperative demand of the imported domestic vicegerent for "hot-and-cowld-wather-and-stationary-tubs," has brought into general vogue, even in rural abodes, water closets, kitchen sinks, fixed hand basins, and the rest of the complicated paraphernalia of the "water carriage" system, which is a very good system, if the plumbing arrangements be intelligently planned and well constructed, if there be a sufficient water supply to flush and thoroughly cleanse all waste pipes, and if a safe outfall be provided, but which, if made to discharge into a leaching cess-pool or to pollute the nearest stream, to the detriment of riparian residents below, is anything but an unalloyed blessing. If a cess-pool be permitted in connection with such a system, it should be of small capacity, absolutely water-tight, ventilated by means of an air-pipe reaching above the level of respiration, and emptied frequently. Its liquid contents, which comprise about seven-eighths of the fertilizing materials, may be utilized in a garden by either surface or subsoil irrigation, and the precipitated solids deodorized with lime, copperas, or other agents, for deportation to such destination as chance or the public authorities may afford. On a scale of more expensive magnitude, where arable or pasture land of suitable quality is at hand, a well-masoned "settling basin," with an overflow into a distributing tank, answers satisfactorily. In communities with a public system of sewerage the final disposition of the sewage does not concern the householder as an individual, though it should interest him more than it usually does in his collective capacity.

The grosser refuse solids which go under the generic name of "garbage" constitute the bane of social existence, from the domestic "swill-pail" to the "dumps" of large communities. Even where the

corporate authorities assume the duty of gathering them from the separate premises they are usually deposited in an aggregate of nastiness at some convenient spot on the outskirts, whence their exhalations vitiate the atmosphere for miles around, or, mixed with mineral rubbish of different kinds, are used by some contractor to fill in prospective building sites, for the gradual murder of future tenants. The common rustic makeshift of burying them in casual shallow pits handily contiguous to the domicile must in time overtax the disinfectant capacity of any soil, and is, as a rule, rather less advisable than the prevalent urban practice of throwing them into a neighbor's gutter or over the roadway. The best way to get rid of such things is, unquestionably, to burn them. Cremation is the manifest destiny of organic matter in all populated places. It means a rapid and innocuous, instead of a slow and possibly dangerous, process of oxidation. In either case organic substances are never destroyed, but their chemical compositions are changed and their elements are profitably recombined in nature's laboratory. In the most humble household the incineration of vegetable matters may be easily effected in a cooking stove or range, if they be put in a little at a time. An ingenious metallic pail with a water-sealed cover and a hinged grated bottom has been anonymously invented by a member of this Association, in which, when placed over one of the openings of a range, a considerable quantity of garbage can be inodorously dried to the point of combustibility and dropped into the fire. On a larger scale furnaces of different capacities are in common use abroad and to a less extent here, which cremate, without offense and at small expense, all private and public refuse, including slaughter-house offal, street sweepings, etc., from small villages up to great cities. One of the first of these, I believe, in this country has been for some time in successful operation on Governor's Island, in New York harbor, where the orderly in charge informed me that the only element of the garrison jetsam which was passingly malodorous was an occasional burnt-offering of old shoes. In some instances the mineral detritus, which forms a large percentage of city refuse, after being thus freed from organic admixture, is converted into a serviceable cement, as is notably the case in Leeds, where the outlay for maintaining the "destructor" is much lessened by the sale of the resulting product. But, aside from any actual pecuniary return, the economy of this plan of combustion, as compared with other methods of disposal, should commend it to every corporate government. In the notorious Whitechapel district of London, where it formerly cost from half a dollar to a dollar a load to cart away to a distance the household refuse and "dust," all the contents of the East End bins are reduced to a harmless mass of clinker at about one-twelfth of the expense by means of a series of strong draught furnaces, which consume all gases generated during the process. The day is probably not far distant when this method of purification by fire will be adopted for organic waste substances wherever civilized men dwell together. Meanwhile it is the part of wisdom to prevent their accumulation either above or under ground.

If an apology be due for this brief presentation of rudimentary considerations before an assemblage principally composed of experts, my excuse must be a desire to remind a wider audience, through the publicity given to our proceedings, that the "dry methods," exclusively advocated by a few doctrinaires, are applicable to a very small part of our deleterious wastes; that sewage farming and other schemes for irrigation and filtration involve separate treatment of precipitated solids; that the best devised system of sewerage still leaves on our hands an enormous residuum which must be otherwise dealt with; and that no one method of refuse-disposal will satisfy the diverse needs of households and communities.

THE TREATMENT OF CYSTIC GOITRE BY ELECTROLYSIS.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY E. FLETCHER INGALS, M.D.,
OF CHICAGO.

In a recent paper upon the treatment of cystic goitre,[1] Thomas M. Hovell, F.R.C.S.E., recommends Sir Morell Mackenzie's method, a description of which was first published in 1872.[2] He compares this plan of treatment with the methods advised by the authors of the leading English and American works on surgery, and unless he is too enthusiastic in his support of Mackenzie's treatment, it is a matter of surprise that a method so efficient and safe should have been nearly ignored by eminent surgeons, while operations of doubtful utility and much hazard have been given the preference. In Holmes' System of Surgery, 1883, Mackenzie's method is recommended as the best. However, Mr. Bryant[3] apparently gives preference to simple tapping of the cyst, or injections of an alcoholic solution of iodine or of the perchloride of iron. In cysts of the isthmus he recommends incision into the cavity as a good and successful operation. With these recommendations Mr. Hovell takes issue on the ground that tapping is very rarely successful and that the irritating injections tend to cause inflammation, which may be excessive, without

[1] Wood's Med. and Surg. Monographs.
[2] London Lancet, May 11, 1872.
[3] Practice of Surgery, 1884.

providing for checking of hæmorrhage when iodine is used, or for the escape of pus in either case.

Mr. Bryant's recommendation for incision of a cyst of the isthmus, or free incision of any cyst as soon as it has suppurated, is objected to as being unnecessarily severe and dangerous.

Mr. Erichsen[4] recommends tapping, or injection of tincture of iodine, and refers briefly to Mackenzie's method.

The late Prof. Gross[5] enumerates six methods of treatment of cystic goitre, viz: the seaton, puncture, injections of iodine, incision, excision, and electrolysis, and states that all are more or less serviceable but not free from danger.

Mr. Hovell agrees with Mr. Bryant that the treatment by seaton is dangerous, and cites Billroth, who twelve years ago spoke unfavorably of incisions, but reported thirty-five cases treated by injections of iodine, with twenty-nine cures and one death. Billroth had operated eleven times by von Brun's method, *i. e.* incision of the sac and stitching its walls to the skin, but of these three had died.

Mr. Hovell considers excision a very serious operation; thus from his comparison it appears that Sir Morell Mackenzie's operation is far superior to any other; however, he does not consider electrolysis. Without informing us as to the actual results of Mackenzie's method, except in two cases treated by himself, he leads us to infer that it is practically free from danger and may be expected to cure the case in from three weeks to four months, and that in the majority of cases the duration of treatment will not exceed eight weeks.

Sir Morell Mackenzie's treatment consists in tapping the cyst with a trochar, the canula of which corresponds in size to a 7, 8 or 9 English catheter. After the contents have escaped, he injects into the cyst a solution of perchloride of iron (℥ij. to aq. ℥j.), which is allowed to remain three days, the canula having been corked and kept in position by a tape passed about the neck. At the end of this time the plug is removed, and if suppuration has taken place the cavity is treated like a chronic abscess; but if suppuration has not occurred the injection is repeated and managed as before. After suppuration takes place poultices are applied and the cavity washed out through the canula several times a day with some antiseptic solution.

This method seems to have been followed by most excellent results, but my personal experience with electrolysis, in two cases, leads me to believe that it sometimes cures more rapidly than, and is at the same time devoid of many of the inconveniences of, the treatment just described.

Case 1.—Mrs. S. consulted me in 1884 on account of a cystic goitre of the right lobe, which I found to be an inch and a half in diameter. I aspirated this two or three times and drew off at at each about an ounce of dark, thin blood or bloody serum. This would be immediately followed by the escape of clear, red blood if the aspiration was not at once discontinued. About one-third of the tumor was found to be of a solid character. Finally I introduced an electrolysis needle into the sac, and placing the opposite pole over the tumor, passed through it for about ten minutes an electric current from six to ten La Clanché cells. This operation was repeated three or four times, when the sac was found not to refill. About three years afterward I found the parts in the same condition. The solid portion of the tumor remained but had not increased in size, and the cystic portion had been entirely cured.

Case 2.—G. L. J., cystic goitre of several years' duration. Patient came to me in the middle of January, 1889, with a history of having had the cyst tapped and injected with iodine and other substances several times during the past two years; also of having had it laid open, and of having worn a seaton in it for several months. I found a cyst in the right lobe of the thyroid gland about two and one-half inches in diameter, which was found to contain three ounces of thin, dark blood. I aspirated the cyst and injected it with carbolic acid several times, as follows:

January 19—℥ss of 5 per cent. aqueous solution, which was drawn off and followed by ℥j of a 20 per cent. solution in glycerine.

January 26—♏xl of a 30 per cent. sol. in glycerine.

February 2—♏xxx of a 30 per cent. sol. in glycerine.

February 9—♏xxx of a 60 per cent. sol. in glycerine.

February 16—♏xv of the 95 per cent. acid, full strength.

The treatment proved of littl or no benefit, for on the 23d of February I found the cyst about the same size as at the beginning. I then introduced two platinum needles into the cyst about an inch and a half apart, and passed through them for twenty minutes the current from four diamond carbon cells (similar to La Clanché).

March 2—Cyst much smaller; repeated the treatment.

March 9—Cyst still smaller; repeated the treatment.

March 16—Repeated the electrolysis in the solid portion of the tumor, the cyst being imperceptible.

March 23—Cyst has not reappeared, and is believed to have been cured.

Thus the cyst that had resisted for many months various other forms of treatment, was completely eradicated by electrolysis in less than

[4] Science of Surgery, 1884.
[5] System of Surgery, 1882.

four weeks. The strength of the current employed was regulated by the patient's ability to stand the pain it caused. A month later, when the patient was last seen, he continued well.

Throughout the treatment I was assisted by Dr. J. E. Rhodes.

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NOTES ON THE PARASITIC THEORY OF ALOPECIA AREATA.

Read in the Section of Dermatology and Syphilography, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY LEWIS WICKHAM,

INTERNE TO THE HÔPITAL ST. LOUIS, PARIS.

So long as a specific parasite for alopecia areata remains undiscovered or is not proven beyond a doubt, so long will the parasitic theory as applied to this affection encounter many adversaries. In favor of this theory in default of the parasite itself there are certain facts of contagion which are definitely proven, and which cannot be regarded as simple coincidences. Among the cases of alopecia which we have had occasion to study in the wards of the St. Louis in the services of Drs. Hallopeau and Vidal, we have noted different ways of transmission from one individual to another of variable degrees of importance.

Here are certain examples of the first order of facts which we are able to see quite frequently:

First. A small girl is affected with alopecia; her sister sleeping in the same bed is ere long attacked with the same disease.

Second. Three children of the same family are attacked with alopecia at short intervals from each other.

Third. A small girl living in the country came to pass a few days with her relatives in town, where a child has alopecia. One month after the child from the country presents plaques of alopecia.

It is to be especially understood that the facts we report in this communication are determined by histological examination. Other instances of the same nature might be cited, but it is unnecessary, as we do not claim that the facts herein cited are rare. The adversaries of the theory may insist that the cases cited are those of simple coincidence, or occurring in members of a family under the same predisposing influences. But we have here two examples of a second series of facts which give a more clearly defined manner of contagion.

First. A young man seeks advice for a plaque of alopecia situated over the right temple, a place which was rubbed by the rim of his helmet, and which had existed for a month. He informed us that about two months previously he had worn the helmet of a friend who was affected with alopecia. This is not all. The plaque was not circular, but its invasion followed the part marked by the border of the helmet, and actually formed a line of alopecia from 2 to 3 centimetres broad in front, and from 8 to 10 centimetres behind, which corresponded precisely to the part rubbed by the edge of the helmet.

We now come to an observation of transmission which is clearly marked, which we have made quite recently.

Second. Four printers presented themselves at M. Vidal's clinic for diseases of the scalp, April 10, 1889. They were afflicted with alopecia and worked side by side in the room. They, themselves, were convinced that the disease was mutually contagious and came to obtain prophylactic measures for their fellow workmen as well as to get relief for themselves. Investigation revealed the following facts: F., æt. 25, perceived a plaque of alopecia on the vertex about the size of a 25-cent piece in July, 1888. Some time after he noticed another of the same dimensions on the right temple. In September, 1888, L., æt. 42, who worked at the side of F., noticed a plaque of alopecia on the nape of the neck. In October and December C., æt. 40, and D., æt. 35, became affected, the former on the nape of the neck, while the latter presented a plaque on the chin.

We investigated as to the presence of nervous complication with a negative result. On the other hand, in both instances the lesions developed quickly. In these cases it seems to us little doubt can exist of their transmission. These journeymen, thirty in number, working side by side in a small room, often exchanging caps, which served, it seems to us, as agents of transmission. Furthermore, these workmen take but little care of their scalps, which we believe greatly assisted in the transmission of the malady.

Would one still attribute the basis upon which these facts are founded to coincidence alone, or to similar conditions of life?

But the parasitic theory is further favored from a clinical standpoint as cited in some of the classic works on dermatology, the most conspicuous of which are the cases of transmission spoken of by Hallier.

It is in France principally that the most striking observations have been made. One can recall to mind the epidemic of alopecia areata in the school of Nogent, in which thirty pupils were attacked in succession. The diagnosis was confirmed by M. Besnier. Still more recently this learned dermatologist of the St. Louis has brought out in a report on alopecia areata which was presented to the Academy of Medicine July 31, 1888, two observations of value which of themselves might well serve as a basis upon which to found the theory of contagion. The first is taken from the report of M. Leon Cohn in May, 1888, on the consecutive occurrence during the month of twenty cases of alopecia in the Regiment Sapeurs-pompi-

ers of Paris. In his official report to the Minister of War M. Leon Cohn writes: "We seem to furnish a most convincing argument in favor of the contagion of alopecia, from its prevalence and successive development in the regiment of Paris. This regiment by its commingling with the population of the city renders it the most intimately associated with civil life. A regiment, again, where the form of service exposes the men to mutual contagion. The sapeurs-pompiers are dispersed every night in small groups to posts where the same cots, and more especially the same bedding is used. There were in all seventy-seven successively affected." Such is the statement of this learned military surgeon. It may be well to add that this regiment had not been exposed to any nervous shock and no nervous disturbance had been noticed. None of those attacked were present at the tragic drama caused by the fire at the Opera Comique the month before.

The second observation reported to the Academy by M. Besnier is that of M. Leloir, of Lille, This case, remarkable as it is, is common in France. We give it here, in closing this series of clinical facts, because it is especially applicable to demonstrate the point we wish to make in this communication.

M. X., æt. 26, a pharmaceutical student, with apparent robust health, had been a victim of alopecia areata of the beard for three years. He sought medical aid in 1885, the disease having at this time invaded the scalp. A few months later he brought an intimate friend who had lived in the same lodgings with him, and who had a few weeks before been attacked with alopecia. Several months passed, when this same friend returning from a tour brought his mistress, who had also developed the disease. But this is not all. X, before consulting me, had spent his Easter holidays at his home; he took no precautions, using in common the same comb, brush, etc., employed by other members of the family. Some months after he returned from his holidays he came to inform me that his mother, one of his brothers and his little sister had been attacked with alopecia. Soon after this I had the satisfaction of examining them and confirming his statement.

These various observations are well calculated to force the conviction as well as to demonstrate the fact that there exists among the alopecias called *peladique* at least *one form of a contagious nature.*

We are far from denying the existence of a form of alopecia of neurotic origin. It seems to us absolutely certain, after having studied most carefully the clinical histories of numerous cases of alopecia, that certain cases are of trophoneurotic origin. The experiments of Max Joseph in 1886, who produced alopecia in small animals after section of the posterior branch of the second cervical nerve immediately behind the ganglion, as well as other investigators, prove conclusively that alopecia may be produced by neurotic disturbances. But this is no reason why one should deny the possibility of an alopecia which is contagious; for, aside from all other considerations, the observations which we have given are sufficient in themselves to establish the fact that certain cases of alopecia are contagious and consequently of parasitic origin.

Let us look at the objections which may be urged against the theory of contagion:

1. One of the first arguments is drawn from the opinion that, if we have here a contagious disease, the foci of transmission should be more numerous. We should possess a series of facts in themselves convincing. Healthy children should not be able to sleep in the same bed with those afflicted with alopecia without contracting the same. In schools, where one so frequently sees the disease, it should multiply in abundance. This argument does not seem to us to be of any great value. Against this we have what seem to us direct evidences of contagion from husband to wife and *vice versa.* Elsewhere, but in the same group of contagious diseases, we find some which are irregular and capricious in their mode of transmission. Why is tinea tonsurans not transmitted to adults? Why does one subject remain free in an epidemic of scarlatina? These instances are common and well known, yet no one doubts their contagious nature. Contagious alopecia is simply difficult of transmission, requiring favorable circumstances which are not always encountered.

2. The parasite has not been discovered in spite of numerous researches, and experiments by inoculation have given a negative result.

These arguments prove nothing either for or against the theory of contagion. There are not wanting diseases truly parasitic in which the parasite remains dormant for an indefinite period of time.

3. In a different way and withal of more importance is the argument drawn from the histological study of alopecia areata. The contagious theory seems here to be at fault, and the importance of this seeming default merits a careful consideration of the facts connected therewith.

First, let us consider the histological appearances as observed in the four cases which were carefully studied, the report of which has already been published. We will give an outline of this report: The plaques of alopecia present in their centre small broken hairs. They are short, being only 2 to 4 mm. in length. Thick and of a dark color at their free end, they are pointed, small, and of a light color at the root. The general form corresponds to the mark of exclamation (!). The hairs are sometimes adherent, but a slight traction is sufficient to dislodge them. Under the microscope the enlargement of the free end is seen

to consist of nodules or swellings which give an irregular contour to the hair shaft. As the root is approached the swellings become pale, transparent and of very small size. The medullary canal is irregular, broken, and the presence of air bubbles is especially noticeable. At the margin of the plaque the hairs are easily detached, and they present the same appearances already described. This, in the main, is the histological description, and one is certainly obliged to acknowledge here all the characters of general atrophy of the papilla of the hair, *dystrophie*, due to some nervous disturbance. The histological study seems, therefore, to disfavor the idea of contagion. But can we not find a basis upon which this discrepancy may be satisfactorily explained? We think so.

M. Besnier has recently made a number of clinical and histological observations which throw much light on this subject.

Atrophic or *athrepsic* lesions of the hair in alopecia may be due to various exciting causes acting directly on the hair papilla or through the mediation of the nerves as reflex impressions.

Far from contesting that there are neurotic changes in the hair follicle in different forms of alopecia, the problem, on the contrary, would be impossible to understand were it not for the intervention of the nervous system. Even if the specific agent which produces alopecia areata were discovered, that of itself would not explain the changes wrought in the hair papilla.

This, then, is the prevailing idea among the majority of the dermatologists of France: *That there exist two distinct diseases called alopecia (paladique). One is a trophoneurosis. The other is due to a parasite which acts indirectly on the hair papilla through the mediation of the nervous system.*

MEDICAL PROGRESS.

Treatment of Whooping Cough.—Friedrich Schilling (*Münch. Med. Woch.*) has treated sixty-two cases of whooping-cough by means of inhalations of chloroform, the patients varying in age from 10 weeks to 12 years. A tablespoonful of tepid water is poured into the boiler of an atomizer, and as many drops of chloroform are added as the patient is years old. If after a week's treatment no improvement is observed, three times as much chloroform is used. Nothing but cold water is placed in the cup which receives the tube from the atomizer. As the chloroform evaporates before the water, the patient should begin the inhalation a little before the aqueous vapor appears. The inhalations should continue until all the water has evaporated from the boiler; they should be repeated four times in 24 hours. The good effects of this treatment are manifested in a few days; in a week the coughing spells diminish in intensity and frequency. In half of the cases treated by Schilling the convulsive period was replaced by the catarrhal period after two weeks of treatment. In no case has the reporter seen the persistence of the convulsive cough to the fifth week. On the contrary, four cases were cured in the first week; in twenty-eight cases the catarrhal period was reached by the end of the second week; in twenty-one by the end of the third week, and in eight cases in the course of the fourth week.

Inhalation of the vapor of carbolic acid previously employed by the reporter, gave less satisfactory results; on an average the convulsive period lasted until the fourth week.

As for antipyrin, although it may be true that it has effected some rapid cures, it has also completely failed in others.

Nasal insufflations of benzoate of sodium have given very uncertain results. Such insufflations, and indeed the vapor of carbolic acid as well, are very disagreeable to children, while they willingly inhale chloroform.

Dosage of Exalgine.—In a recent thesis Gondinau insists upon the antithermic properties of exalgine, which constitutes, according to Dujardin-Beaumetz, one of the best substitutes of antipyrin. The dose is from 0.25 to 0.60 centigrm. at one time in 24 hrs. Exalgine is not soluble in cold water, but it dissolves readily in weak alcoholic solutions; it has no taste, and may be given in powder or in aromatic solutions. A good formula is the following:

Exalgine.	2 grm.
Tr. orange peel.	5 grm.
Syr. orange flowers.	30 grm.
Distilled water.	128 grm.

Each tablespoonful contains 0.20 centigrm.

—*Jour. de Méd. de Paris.*

The Causes of Acquired Immunity from Infectious Diseases.—After giving a résumé of the ideas of Jaccoud and Bouchard on this subject, Jasiewicz makes the point with them that immunity is first acquired by the presence of microbes and soluble substances secreted by them, and then by the vitality of the cells creating a constitutional state comparable with natural immunity. But this immunity is temporary, and even if it appears permanent it is because the individual conditions have changed; in fact it is influenced by species, race, individuality and age. Thus, the adult dog is refractory as regards splenic fever, while the young dog succumbs to it. The natural immunity of the fowl to the same disease is destroyed by lowering its temperature.

Jasiewicz draws the following practical conclusion: The immunity conferred by infectious diseases or vaccination being transitory, it becomes

necessary to vaccinate frequently. He believes also that the organism thus acquires not merely an immunity from the disease against which it is inoculated for, but also against other virulent affections. He believes that morbid entities are not as dissimilar in their causation as they appear, but that they may be transformed, the one into the other, according to the mode of entrance of the disease, or the particular condition of the soil in which they are received. This somewhat audacious theory has been stubbornly defended by its advocate for several years.—*Jour. de Méd. de Paris.*

TREATMENT OF CHRONIC ADENITIS AND COLD ABSCESS BY INJECTIONS OF NAPHTHOL.—In his inaugural thesis DR. H. LASSERRE mentions the following objections to the treatment of these cases by means of iodoform ether:

1. Violent pain produced by the sudden distension which follows the injection. This distension sometimes leads to extensive sphacelus of the skin, or to compression of neighboring organs.

2. A very slow cure, because the injections must be made at points widely separated from each other, and must be repeated three or four times.

3. The danger from ether, which sometimes causes profound sleep.

Furthermore, iodoform, when injected into large, irregular cavities, may produce poisoning.

Naphthol is a harmless and powerful antiseptic, and is comparatively insoluble. One gram may be dissolved in a litre of water with the addition of 50 grams of alcohol.

The strong solution of Brouchard is recommended for injections:

Naphthol B	5 grams.
Alcohol (90°)	33 "
Warm distilled water, q. s. ad.	100 c. c.

Filter while warm.

When required for injection the flask is plunged in a hot water bath. The syringe, meanwhile, is placed in a warm antiseptic solution. These precautions are taken to prevent the precipitation of the naphthol and clogging of the needle or trocar. The pus is evacuated and the antiseptic solution slowly injected.—*Le Bul. Méd.*

SUSPENSION TREATMENT OF TABES DORSALIS.—DRS. BIANCHETTI and MORINA give the results of their experience in the suspension treatment of tabes dorsalis, etc. The former reports eight cases of tabes treated in this manner. In three cases the treatment had to be discontinued on account of impairment of sight produced; in five excellent effects were obtained, the lancinating pains, the gastric and bladder disturbances, the incoördination, the weakness of the lower limbs and the sexual impotence being markedly influenced for the better. The number of séances varied from 20 to 53. The favorable effects of treatment were also seen in the improvement of nutrition. The frequency of the pulse and respiration was increased during suspension and the spinal column was increased in length from 2 to 4½ ctm.

Dr. Morina reports 21 cases of tabes treated by this method, together with cases of spastic paralysis and paralysis agitans. In about one-half of his cases improvement was obtained by suspension, while, on the contrary, the treatment was badly borne by other individuals and had to be discontinued.—*Congress of the Italian Med. Assn., 1889.*

A CASE OF LIPOMA.—BILLROTH reports the case of a patient with an enormous development of fat. Diffuse lipomata, he says, of congenital origin, are sometimes seen on the hands and feet and are often associated with syndactylus and polydactylus. Certain cases are also seen in which we may speak of lipomatosis, which appear as non capsulated lipomata upon various parts of the body, especially the neck and throat. In the present case the arms and shoulder regions are of enormous size, while the forearms are rather slender. From the history it appears that the trouble began to appear six years ago, with redness, swelling and pain. The redness and pain disappeared, while the swelling increased, until three years ago. If the history is correct, the case may have been one of erysipelas, followed by elephantiasis.

ACID SUBLIMATE SOLUTION IN DIPHTHERIA.—DR. WM. KRAUSS has translated for the Memphis *Journal of the Medical Sciences* an article by DR. REMERT, of Frankfort on M., upon the above subject, of which the following are the essential points:

The solution employed is that of Laplace, one part of sublimate and five of tartaric acid to one thousand parts by weight of water. The object of the acid is to prevent coagulation of albumen, which often acts as a barrier to the action of the drug. Forceps are wrapped firmly in absorbent cotton, saturated with the solution, and with them the membrane is ripped off from below upwards. This is repeated in an hour. After this, simply touching the denuded spots twice daily with the solution is all that is required. The one aim of the treatment is to remove the infection mechanically. This is not, however, an easy or a pleasant procedure, and in order to carry out the treatment successfully great energy is needed.—*The Obstetric Gazette.*

DURING the past year five surgeons have died in India from cholera contracted in the discharge of their duty.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, FEBRUARY 15, 1890.

OCULAR DEFECTS AND NERVOUS DISEASES.

At a meeting of the New York Neurological Society, March 1, 1887, DR. GEORGE T. STEVENS read, by invitation, a paper entitled "Irritations Arising from the Visual Apparatus Considered as Elements in the Neuroses," the main proposition of which was expressed by him as follows:

"Difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency."

This conclusion was said to be based upon observations of more than five thousand cases of nervous diseases in private practice, and a considerable number of cases in public institutions. He illustrated his views by histories and photographs of cases, principally of chorea and epilepsy, in the latter of which diseases especially he reported very remarkable results from treatment based on this theory. Out of sixty-four consecutive cases of well-marked epilepsy, in which treatment had been directed, with one exception, exclusively to ocular conditions, thirty-two had remained free from attacks for a time varying from several months to seven years; twenty-one had shown such marked improvement as to indicate that the ocular conditions were the cause of the disease; and although eleven cases had, thus far, proved refractory to treatment, he believed this to be due rather to the complicated nature of the ocular disorders than to independence of the two conditions. In the causation of epilepsy he laid more stress on insufficiencies of the external muscles of the eyeball than on errors of refraction and accommodation. The treatment of these incoördinations by glasses he had found unsatisfactory, and preferred, in most cases, to restore the balance of the muscles by graduated tenotomies.

In the discussion which followed, DR. AMBROSE L. RANNEY endorsed the statements of Dr. Stevens from his own experience, and he has since embodied substantially the same views in his recently published work on nervous diseases.

The novelty and importance of the opinions advanced naturally excited much interest and some incredulity, and the proposition was made to test the correctness by trial on a series of cases to be treated by Dr. Stevens, under the observation of a committee of the Neurological Society. The committee, as originally constituted, consisted of Drs. E. C. Seguin, W. R. Birdsall and M. A. Starr, neurologists, and W. O. Moore and David Webster, ophthalmologists. To these Drs. C. L. Dana and F. P. Foster were afterwards added, at the request of Dr. Stevens.

The committee reported at a meeting of the Society, November 5, 1889, and after the reading of their report an elaborate reply was read by Dr. Stevens.

By agreement the enquiry was limited to epilepsy and chorea. Twenty-eight cases were furnished, of which fourteen were rejected as unstable, or did not remain under treatment long enough to warrant their being reckoned in estimating the results. Of the remaining fourteen, five were cases of chorea and nine of epilepsy. They were treated solely with a view to remedying ocular defects, and remained under treatment for periods varying from four to thirty months. One patient is mentioned as having had twelve operations and worn twelve different kinds of glasses. The committee report that none of the patients are cured; three cases of chorea and one of epilepsy are improved, one case of chorea very much so, and two cases of chorea and five of epilepsy unimproved. The result in the remaining case is not known. Some of the patients are said to have more numerous attacks than when under treatment with bromides, and in several cases double vision is reported as a consequence of the

operations. The main result of the investigation is summed up as follows:

"In view of these facts, your Committee cannot but express the opinion that, so far as this investigation has warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to warrant its adoption or recommendation to the members of the Neunological Society as a means of cure, or as the sole therapeutic measure. It will be noticed that none of the cases have been cured—all remain indefinitely under treatment, a perfect ocular equilibrium not having been secured in any case. If it is impossible to secure such equilibrium, a cure is not to be expected, granting the theory of Dr. Stevens. If it is possible to secure such equilibrium, it is to be supposed that it can be secured within at least two years, yet four of these cases have been under constant treatment for two and one-half years without this result."

Dr. Stevens claimed that all of the fourteen patients who remained under treatment long enough to give his method a fair trial had been benefited—some of them very much so—and supports his opinion by certificates of several well-known physicians who have examined some of the patients in question.

There is no question that serious nervous disturbances often arise from over-exertion of the muscles employed in accommodation and convergence, and that their cause is sometimes overlooked, even by competent neurologists, and if the profession generally should jump at the conclusion that because Dr. Stevens has not, apparently, accomplished all that he claimed in regard to a disease that has always been one of the opprobria of medicine, there is no use in enquiring into the condition of the eyes, in any case in which they are not obviously at fault, it would be very unfortunate.

RESPONSIBILITY IN JOURNALISM.

Medical journals and medical societies, generally take pains to announce that they do not hold themselves responsible for the expressed opinions of their contributors and members; nevertheless there are bounds of propriety, dignity and morality which they cannot transcend without violating duties which they owe to themselves, to the profession and to the general public. When these duties are disregarded the offenders become powerful agents for the dissemination of pernicious influence. It is not sufficient to disclaim responsibility for individual expressions when these expressions are positively derogatory to the character of the journals or societies which give them publicity. The public makes no fine discriminations, and an unworthy utterance borrowing a guise of respectability from its associations goes forth with the bravest appearance of virtue and integrity to delude the thoughtless and unwary.

These remarks are suggested by the perusal of an article which appeared in the September number of the *Medico-Legal Journal* of New York. In the table of contents it appears thus: "*Abortion, Anonymous.*" One need only read it to learn why it is anonymous—the writer dare not append his name to it. It is a weak defense of criminal abortion the object of which is to show that all our laws on this subject should be repealed and women left in peace to destroy their children as fast as they choose. We are not a little surprised that the *Medico-Legal Journal* should have lent its pages to such an article as this. We are informed that "authors whose articles appear (in the *Medico-Legal Journal*) with their names, are solely responsible therefor." Who then is responsible for the anonymous articles? To permit such an occurrence as the anonymous publication of so disgraceful an essay as this one to pass without remonstrance is merely to invite a repetition of the offense. There have been times when there was good excuse for anonymousness, but they were times of despotism and terror. There is no excuse for it to-day, least of all in medical journalism.

"DRAIN SORE THROAT."

In the *Montreal Medical Journal*, September, appears an abstract of a paper by DR. J. C. CAMERON, in which he applies the term "drain sore throat" to an affection not infrequently observed, but very frequently difficult of explanation as to its causation. He was recently called upon to treat ten cases of sore throat in the same family. The malady was of a marked adynamic character and was accompanied by a rash somewhat resembling that of scarlet fever; in six of the cases there were both enlargement and ulceration of the tonsils; and at the outset of the suppuration

in tonsils the appearances were strongly suggestive of diphtheria. Suspecting that the drainage might be at fault, Dr. Cameron caused it to be examined and defects were found in the ventilation of the soil-pipe, sufficient to cause a pollution of the house atmosphere. These seem to belong to a class of cases which, when seen out of series, or where defective drainage has not been or can not be discovered, has repeatedly baffled diagnosis and has frequently mystified the collector of diphtheria statistics. The scarlatiniform rash is also the occasion of mystification, when the throat trouble is less markedly developed than it was in Dr. Cameron's family of sick people. And even where the cases occur in multiples, and where the drainage defects are manifest, there will be room for differences of opinion as to the propriety of classing such cases as diphtheria. Practitioners who have had a marked degree of success with some favorite plan of treating diphtheria will be strongly tempted to look upon the generally favorable termination of this class of cases as one of the beneficial results of their efficient medication. There has been a variety of appellations attached to this disease, such as "drain fever," "diphtheroid," "tonsillar diphtheria," "diphtheritic sore throat," "diphtheria without membrane," and "scarlatinal tonsillitis," according to the different standpoints of the different observers; but the term employed by Dr. Cameron is the clearest and the least suggestive of error. It is not an alarmist's term; it has little of dread in its sound and implies, withal, the idea of prevention, upon the removal of the sanitary defect. These are two points that are eminently desirable in the selection of a terminology which must be pronounced at the bedside and among the laity. In the absence of a knowledge of the true, specific cause, the term "drain sore throat" has the right of currency in that it is clear, measurably descriptive and helpful towards sanitation; but the most commendable point is that it distinctly draws the line between this form of throat affection and genuine diphtheria.

MEDICAL COLLEGE CONFERENCE.

It is obvious that the leading medical colleges in this country have been in the main responsible for the present standards of requirement for medical graduation. The creditable advances thus far secured were attained largely through their instrumentalities. In the future, the power of their concerted influence must largely affect legislation in the several States. We believe that no men in the profession are so well prepared to formulate the higher standards which are needed as are those prominently connected with our leading medical institutions.

It seems eminently desirable that a conference of such men should be held, and that at an early day. Extended discussions, debates and writings have paved the way, and the time is at hand for judicious action. The medical colleges, the medical profession and the State Legislatures should make common cause in this matter, nor rest satisfied until a creditable standard of medical education is made an imperative condition to the practice of medicine in every part of the United States.

We are specially interested in the action of yesterday, February 7, on the part of the medical colleges and schools of Maryland, which comes to us by telegraph.

"BALTIMORE, Md., Feb. 7.—The medical colleges and schools of Maryland, in conference here to-day, issued an appeal to the medical colleges of the United States, asking them to send delegates to the approaching convention of the American Medical Association at Nashville, Tenn., with a view of effecting a reform in the methods of medical institutions in vogue in this country. The following subjects are considered as most likely to come up for discussion: 1. Three years' course of six months' session. 2. Graded curriculum. 3. Written or oral examinations. 4. Preliminary examination in English. 5. Laboratory instructions in chemistry, histology and pathology. There are two schools in Baltimore—the Maryland University and the Johns Hopkins Hospital—that have already adopted the three years' course, but their assistance was asked in the movement and it was promptly given."

We sincerely hope for, and anticipate, a hearty response to this circular on the part of all American colleges which have at heart the advancement of medical education. The time named, the place, and the simultaneous meeting of the Association are opportune. The Convention should be conspicuous for its numbers, for the wisdom of its counsels, and for its formulation of methods for future action.

DR. CHARLES S. WOOD, who was recently elected President of the New York County Medical Association for a second term, died February 1st of Bright's disease. Further reference to his death will be found in the present issue.

EDITORIAL NOTES.

HOME.

THE CINCINNATI POLYCLINIC.—Dr. C. S. Ayres has been elected President of the faculty.

THE CHICAGO POLYCLINIC has a new plant worth $40,000, and is consequently in a very flourishing condition.

THE GRADY HOSPITAL.—As previously announced, the city of Atlanta, Ga., has appropriated $30,000 for a hospital to be named for the late Henry W. Grady. In addition to this $15,000 has been contributed by citizens, and it is expected that the fund will run up to $100,000.

HOSPITAL FOR INFECTIOUS DISEASES IN CHICAGO.—Several ladies of means have undertaken to supply a "long-felt want" in Chicago—a hospital for infectious diseases, particularly diphtheria and scarlet fever. Such cases are turned away from all existing hospitals. The amount of subscription already received indicates success.

DR. HOBART A. HARE, the present editor of the *Medical News*, has been awarded half the prize of $1,600 by the Royal Academy of Medicine of Belgium for his essay upon epilepsy. This is the fourth prize awarded to Dr. Hare for medical treatises—two coming from the Rhode Island Medical Society, and the third being the Fothergillian medal.

SENATOR INGALLS' BILL.—Senator Ingalls has introduced a bill into the Senate establishing a Board of Medical Examiners for the District of Columbia. The bill provides that the Board shall consist of ten physicians or surgeons, three dental surgeons, and, in addition, five homœopathic practitioners of medicine. The term of office shall be four years.

DR. EDWIN WEBB, who was probably the oldest physician on Long Island, died at his home in Hempstead, January 29th, aged eighty-six years. He was born in England. He studied medicine at the College of Physicians and Surgeons, N. Y., graduating in 1825.

DEATH BY ELECTRICITY.—A remarkable accident occurred at Newburgh, January 20th, by which a horse and man were severely injured and another man was killed by electricity. In this case neither the horse nor either of the men was even in c ntact with the wire that carried the fatal current. The current was diverted from the wire, the insulation of which had become impaired, by an iron awning post, which the horse, who was tied to it, touched with his nose. In going to his rescue the man who was killed also touched the post, but the man who was injured simply touched the body of the other.

HOSPITAL FUND.—On January 31st the annual hospital collection in New York City reached the sum of $52,919.

FOREIGN.

MICROBIOLOGY IN BRAZIL.—The Medical Faculty of the University of Rio de Janeiro has recently reorganized its laboratory of experimental physiology, so as to bring it up to the level of modern scientific requirements. It is intended that the laboratory shall also serve for microbiological research, and for the preparation of anthrax virus, etc., for inoculation. The laboratory will be under the direction of Dr. Lacerda.

THE COUNCIL OF THE SEINE.—The Council of the Seine has voted to establish a hospital in the suburbs of Paris for the care of new-born children whose state of health or whose antecedents are such as to give rise to a suspicion of syphilis. The other establishments for assisted children will be maintained as before, and the physicians in attendance upon them will be required to visit the syphilitic children once a week, for which services they are to receive 2 francs per visit.

LA GRIPPE IN PARIS.—During the third week of December there were 333 deaths reported in Paris for a single day, the average for this period of the year being about 200. The great increase in mortality was attributed to the prevalence of the grippe.

A NATIONAL LEPROSY FUND IN GREAT BRITAIN.—Under the patronage of the Prince of Wales a fund, amounting to seven thousand pounds, has been collected in London for the furtherance of researches concerning leprosy. It is proposed to collect five thousand pounds more and with these contributions establish two scholarships; one for the study of the disease in India and other parts of Asia, and the second one to investigate the British and European evolution of the malady. The project has the support of Sir Andrew Clark, Mr. Jonathan Hutchinson and many other leading medical men.—*Brit. Med. Jour.*, Jan. 18.

TOPICS OF THE WEEK.

INFLUENZA AND CHOLERA.

The following extracts are made from the report of the Secretary, Dr. J. H. Rauch, to State Board of Health of Illinois, for the quarter ending December 31, 1889:

The first cases of influenza recognized in Europe were observed in St. Petersburg about the middle of October. At that time it was supposed that the prevalent epidemic had taken its origin in or about Wassali-Ostrow, southwest of St. Petersburg, and Kolomna, sixty-five miles southeast of Moscow, appearing in these regions and rapidly spreading north to the capital. Both these supposed points of its origin are in direct communication by railroad with St. Petersburg, Wassali-Ostrow being the nearest. Within three weeks after its appearance one-half the population of St. Petersburg was rendered prostrate, and by November 12th it seems to have spread over the whole of European Russia. In Asia it was first noticed in Tomsk, a commercial town in Central Siberia, and appeared in the Caucasus about November 11th. It is yet too soon, on account of meagre information, to determine where the epidemic really took its origin. Thence it spread into Finland and Eastern Prussia, and in the beginning of the month of November invaded Berlin, the first cases being observed at the City Hospital in Friedrichstein; thence it spread to Vienna and Paris. By December 20th it was epidemic in nearly all the capitals and large cities of continental Europe. It was first recognized in Boston on December 17th, in New York city December 20th, and in Chicago about December 23d, and probably first among the employés of the postoffice. It is also said of Edinburgh that "the postal and telegraph servants had been the first to suffer." It has extended from the Atlantic to the Pacific, and as far south as Mexico and Central America, practically spreading over Europe and a large portion of North America within ninety days, extending over a greater area and with greater rapidity than any epidemic of which we have a record. The so-called influenza seems to have made its appearance in the large cities first, and afterward to have extended to their immediate neighborhoods. It appears very much as though there must have been some communication, although it is said to appear simultaneously in different localities. I am inclined to think that if the history of the disease is carefully studied some communication will be discovered as incident to its spread. The present epidemic has extended from St. Petersburg to the Pacific coast and Central America within three months. Is this due to the increased facilities for communication and travel?

Since the year 1173 to the present time there have been sixty-two epidemics of the so-called influenza in Europe, or one in about every eleven years. During this period it assumed a pandemic form fifteen times. When it first made its appearance in October, 1889, on the continent of Europe, the nature of the disease was in doubt, many of the medical authorities of St. Petersburg, Berlin, Vienna, Paris, and even in England, and also in this country, took the view that the present pandemic is a modified form ot dengne, the result of temperature, dengue being practically a disease of warm weather and subtropical countries. This so-called influenza, when it appeared in different localities, did not present all the typical features of former epidemics, but did manifest a number of very marked symptoms that are found in dengue. It was also supposed by some that the influenza took its origin from the dengue, owing to the fact that the dengue was epidemic at Constantinople and other points in Asia Minor and Southern Europe during the months of July, August, September and October, and is prevailing even at the present time in the southern part of Europe; and that the dengue, spreading northward from Turkey to Russia, changed in its type as it progressed north until it assumed the present form.

The month of December was a most remarkable one. I have tables prepared showing the temperature and rainfall for the months of October, November and January for the years 1880–1889, inclusive, at the cities of Chicago, Cairo and Springfield. It will be seen for the month of December, 1889, at Chicago, the mean daily temperature was 11.7° higher than the mean for the month for the past nine years. In Springfield, for the month of December, 1889, the mean daily temperature showed an increase of 13°. A similar and more marked contrast is to be noted at Cairo for December, 1889, where the mean temperature was 55.3, against 37.55—a difference of 16.8. The table for January, 1890, shows not only an increase of temperature, but also of rainfall. It is easy to see that this unusual and unseasonable high temperature has produced a general feeling of malaise, preparing or predisposing people to susceptibility to any epidemic influences. In Chicago the epidemic first made its effect manifest in the death-rate for the week ending December 28th, and reached the highest point January 25th, when also the mean temperature was the lowest that had been observed during the present winter. It was two weeks longer culminating than in Boston. From the week ending December 28th to the week ending February 1st 1,208 deaths may be attributed to the malady; of these there were 610 under 5 years of age, a number much greater proportionally than in any other city. Are there more children in Chicago? Nearly two-thirds of the deaths were caused by diseases of the respiratory organs.

Influenza has also made its appearance at Charleston, S. C., but not yet at New Orleans. It is at this time prevalent throughout Illinois.

The disease made its advent in Springfield at the hotels about January 4th. While there have been a great many cases and much sickness, no death is directly traceable to the influenza. The total number of deaths was twenty-three in December and thirty-one in January, an increase of only 35 per cent., while at Chicago there was an increase of over 61 per cent. for the same period. The greatest mortality occurred during the week ending January 25th, when the mean temperature was lower than at any time during the two months under consideration. One of the factors in this slight increase in the death-rate in Springfield was no doubt the absence of alarm or panic, as the fluctuations of temperature were greater in Springfield than in Chicago.

The percentage of increase in the different cities from the time the disease manifested itself to February 1 is: Boston, 2.07; Chicago, 1.12; New York, .51; Baltimore, .263; Cincinnati, .680; Washington, .208; Philadelphia, 1.20.

Occasionally it has been found that when an epidemic of influenza occurs epizootics of the same character prevail among horses, dogs and cats. This was especially the case in 1872–73 in this country, and I am told that cases among horses have recently been noted in Chicago.

A close estimate of the mortality in the Northern States from the disease of influenza so far would reach about 10,000. The disease is gradually spreading southward, but owing to the higher temperature, it will manifest its usual benign character. Relapses occur and the great care must be exercised by the victims while recovering. This was especially noticeable at Odessa and Copenhagen. Its fatality was equaled only once before, and that was during the autumn and winter of 1789–90—just a century ago.

Influenza and Cholera.—One of the most distinguished medical authorities in St. Petersburg recently announced the firm conviction that cholera would follow the epidemic of influenza in Russia, as it had for six times in the past. Dr. Hirsch, who is the best authority on epidemics, is of the opinion that it was an accident, and I concur with him. It is true that in November, 1830, influenza prevailed in Russia before the cholera made its appearance. In January and February of that year the influenza also prevailed in Russia, in March in Poland, April in Germany, May in Austria, Denmark, Belgium, France, Switzerland, England, Scotland and Bohemia, June in Germany, England and France, July in Germany, Switzerland, Sweden, England and Italy. During this time cholera prevailed in Russia, Germany, England and France. In November, 1831, influenza prevailed in New Jersey and Penusylvania. In November, December and January in the Middle States. In February, 1832, it made its appearance in Georgia. Cholera did not make its appearance in Canada and the United States until June, 1832. In 1833 influenza prevailed in nearly every country in Europe. In 1833–34 outbreaks of cholera occurred in the United States, but there was no influenza. In June, July and August, 1843, influenza prevailed in the United States more generally, with the exception of this pandemic, than ever before, and there was no cholera in the country. In 1847–48 influenza was generally diffused over the Eastern Hemisphere. Cholera was introduced into New Orleans in 1848, and there was influenza in California in January, 1851. There were also cases of cholera in the United States in 1852–54, without any influenza. From January to March, 1873, influenza prevailed generally throughout this country, while cholera was introduced at New Orleans in February; but there was cholera in 1866–67 and no influenza. But the visitation of cholera in 1873 was limited to the valley of the Mississippi.

There is no doubt that at this time there is a pandemic wave of disease spreading over the world, commencing with cholera last July, August, September, October and November in Mesopotamia, kept back by the temperature and cordons from spreading northward and westward, but crossing the Turco-Persian frontier and raging as an epidemic in Central Persia, and at this time is finding its way north. I shall not be at all surprised if cholera obtains a foothold in Russia by way of the Caspian Sea in consequence of the generally bad sanitary condition of Russian towns and villages. But I don't believe that it will spread beyond into the German and Austrian Empires, because of the sanitary precautions taken by the authorities.

In the report on this subject made at the last meeting, September 27, 1889, I said: "It is too early yet to tell whether the present outbreak is the beginning of a new pandemic. In reviewing the introduction of cholera into Europe, it will be seen from the foregoing that in four pandemics it found its entrance by the same routes as the present. Fortunately the near approach of winter will materially assist in preventing its spread or in totally stopping it, independent of the more care now being exercised by the sanitary authorities to prevent its spread than heretofore. While the probabilities are that it may be arrested, still the indications must not go unheeded by those in charge of sanitary matters."

By the 10th of November cholera had spread to the city of Mossul, and by the 1st of December had invaded three-fourths of Mesopotamia and the Turco-Persian frontier, although the mortality of the disease was greatly diminished. Apparently held in check by sanitary cordons and the lower temperature, recent advices show that it has made considerable inroads into Persia, having crossed the Turco-Persian frontier at a number of points. In Central Persia there has been an alarming increase and the inhabitants are fleeing northward toward the Russian ports on the Caspian. A St. Petersburg dispatch of January 27 says that Persian Khorassan is ravaged by an intestinal disease of excessive fatality, its exact nature unknown, 3,000 deaths being reported. At Nur, in Meshed, a district in Upper Persia, as many as 100 deaths occur daily. This town is only a short distance from the Caspian Sea.

"Remembering that this is the route into Europe which cholera has so often taken before," says the London *Lancet*, "the announcement will be regarded as one of no little gravity, the more so because the Caspian port towns and fishing villages have a bad reputation in regard to those sanitary conditions which are known to favor the diffusion of cholera." It is also reported that the epidemic at Bagdad, which had abated toward the end of November, is raging again with renewed fury.

IS THE INFLUENZA CONTAGIOUS?

It is exceedingly difficult to ascertain definitely whether influenza is really contagious, but the history of the present epidemic renders this opinion probable. Coming in a wide-spread wave, extending over an enormous extent of country at once, it is the type of a Pandemic. But the eccentricities of its spread render such an explanation unsatisfactory. We have had the affection here, beyond any reasonable doubt, for four weeks. Yet we hear of its extending, even at this late date, to towns in Europe hitherto unaffected; although in other and neighboring places it has subsided some time ago.—*The Times and Register.*

PRACTICAL NOTES.

CHRONIC RETENTION OF THE URINE.

Englisch divides these cases into two classes: 1. Where there is relative insufficiency of the bladder; 2. Where this insufficiency is absolute. The disturbances arising from this insufficiency react not only on the urine, but also on the bladder itself, as well as on the general constitution. One invariable symptom is the constant desire to urinate. In the beginning this is painless, but later it becomes intensely painful. In some cases the urine is clear and acid when passed, but it becomes alkaline and cloudy on standing a short time. Quite often, just at the end of the micturition, a drop of blood is passed, which is caused by the rupture of one of the small veins in the neck of the bladder. The general symptoms at first may be so slight as not to attract attention, but later they are pronounced, especially when the kidneys are affected.

In mild cases, warm baths will stimulate the bladder to contract; in more severe cases, cold applications to the perineum are of service. If this is not sufficient, recourse must be had to the catheter, without delay.

Polyuria has been observed when the entire quantity of urine has been drawn off. To avoid this, it is advisable to draw off eight to ten ounces, and replace it with an equal quantity of of four per cent. solution of boric acid, which may be repeated in a few hours. As the condition improves, the catheter need be passed but once in twenty-four hours.—*The Times and Register.*

DIABETIC DIET A SUBSTITUTE FOR ARTIFICIAL PREMATURE LABOR.

Prochownick (*Arch. d'obstet. et de gyn.*, Oct,, 1889) comments upon the unsatisfactory results of premature labor, so far as concerns the child. The high mortality of infants prematurely born has led him to seek a substitute. This he appears to have found in the old and abandoned practice of restricted diet. He reports in detail three successful cases which he treated, during the last few weeks of gestation, with a dietetic treatment entirely analogous to that of diabetes.

In his first case, perforation, version and premature labor had been successively employed in previous births. The dietetic regimen was pursued for two months before her last accouchment. The result was a small living child, whose cranial vault, though hard, was still plastic. The child remained healthy and grew rapidly.

His second case was a dwarfed and scoliotic woman whose first delivery was by cephalotripsy, the second by difficult version, the child dying in four hours, the third by premature labor, the child dying at the fifth week. In the fourth pregnancy the author placed the patient on the restricted diet during the last five or six weeks. The child was a male and at birth weighed little more than two-thirds the usual weight. It however presented all the signs of maturity so far as regards the diameters of the head. It lived and throve.

The third case was a secundipara whose first child had been sacrificed by craniotomy. She was placed on the dietetic treatment for four and a half weeks and was delivered at term of an undersized child which lived.—*Brooklyn Medical Journal.*

USES OF BORACIC ACID.

Dr. Lebovicz, in the *Weiner med. Presse*, narrates some uses to which he has put boracic acid.

1. Boracic acts antiseptically. Every soldier should carry an ounce of it in his overcoat pocket, and a handkerchief cut into two triangles for necessary bandages. Simply sprinkling a wound with finely powered boracic acid suffices to insure rapid healing. This remedy being odorless and itself absorbing all odors, the author has used it advantageously in abscesses, ulcers of the feet, caries and necrosis of the bones, and in complicated fractures.

2. In anthrax and after the incision of furuncles it acts well when applied directly to the parts. Forming furuncles should be painted several times daily with the following:

℞.—Boracic acid }
Water, } āā equal parth

3. In burns, where the flesh is exposed, it is necessary to be careful with poisonous antiseptics. Boracic acid possesses the advantage of being non-poisonous. He covers the burnt surfaces with a boracic vaseline ointment in the proportion of one to five:

℞.—Boracic acid (finely powdered) 20 parts
Glycerine 15 "
Mix, and add,
Vaseline 85 " ℳ.
Apply twice daily.

In severe burns with fever, the author combated the fever by the internal administration of the following:

℞.—Boracic acid 4 parts.
Glycerine 10 "
Water 100 "
Syrup of poppies. 25 " ℳ.
Sig.—A teaspoonful every two hours.

—*The Pacific Record.*

GLYCERITE OF CALF PEPSIN.

Dr. Frank Woodbury advocates the use of a solution of calf pepsin in glycerine, to which he gives the name of glycerite of calf pepsin, as an adjunct to a milk diet for those who are unable to digest the casein of cow's milk, and he claims

that calf pepsin is a more suitable and natural preparation to be used for such a purpose than that obtained from the hog. The process of manufacture is as follows: The stomachs of healty young calves are washed clean with running water, the mucous membrane is dissected off, crushed and treated with glycerine and slightly acidulated water, in which it remains until the pepsin is all extracted, the solution is then filtered carefully, and to it is added a small proportion of the acid phosphate of lime, to insure a faintly acid reaction in the finished product. A drachm of this solution readily acts upon a pint of milk. In the case of infants he recommends that from ten to twenty drops of the pepsin solution shall be given fifteen or twenty minutes after feeding; in adults from one half to one drachm is added to the milk before it is swallowed. Junket made with the glycerite of pepsin from either boiled or unboiled milk is a delicate and easily digested form of nourishment for the sick. —*Brit. Med. Jour.*

EUCALYPTUS IN CANCER.

I lately had a case of cancer of the breast in which the ulcerating surface was about eight inches by six. The odor from the discharge was most sickening and offensive, and it was made worse by the odor of the carbolic acid which they were using. No one could remain long in the room with the patient on account of the intolerable smell. The carbolic acid was stopped, and the eucalyptus disinfectant used. The wound was sprayed with it, as also the lint with which it was dressed; tenax was wetted with it and placed under the wound to catch the discharge, and, by the use of a spray diffuser, the air of the room was filled with the fragrant odor of the eucalyptus. All offensive smell at once ceased, and there was only the smell of an ordinary suppurating surface.

In a case of cancer of the sigmoid flexure where the discharge was frequent and very offensive, the injection of a small quantity of eucalyptus emulsion twice a day stopped the offensive odor, and checked the frequency of the discharges. And in a case of cancer of the neck of the uterus, the offensive smell was stopped, the discharge lessened in quantity, and the tendency to hæmorrhage diminished.—J. Brendon Curgenven, *Brit. Med. Jour.*

SALOL IN BURNS.

The favorable influence of salol in burns, communicated by Tato and Cabatelli, has probably also to be explained by the action of lanolin, with which the authors combined salol as a 3 per cent. ointment. The addition of salol or ichthyol to lanolin he thinks unnecessary for the said purposes.—*Provincial Medical Journal*, Halifax, Eng.

SOCIETY PROCEEDINGS.

Medico-Legal Society of New York.

Annual Meeting, December 18, 1889.

CLARK BELL, ESQ., President of the Society, read a paper on

HYPNOTISM.

The medical profession in America do not give this subject the attention its importance deserves. We know of no medical man of prominence in America who has publicly identified himself with the investigation of this science as some of the most eminent men in foreign countries have recently done.

Dr. Wm. A. Hammond, some years ago, gave the subject considerable attention, and gave public experiments before the Medico-Legal Society, of patients under its influence, exhibiting the usual phenomena of unconsciousness to pain, and entire domination of will power and of action.

The late Dr. Geo. M. Beard was also a student of this phenomenon and, had he lived, would doubtless have contributed to, and have been now conspicuously at the head of the science here. A few physicians here and there have touched it on the border lines, but, as a profession, medical men in America know little concerning it, and the public, who naturally look to them for advice on such subjects, are entirely ignorant of this phenomenon, or the progress made abroad in the investigation of the science.

Hack, Tuke, Ireland, Matthias Roth, Gurney, Myers, in England; Charcot, Binet Fére, Gilles de la Tourette, Paul Regnard, Fontan and Séquard, Azam, H. Beaunis, E. Berillon, Ochorowicz, Ladame, Delboeuf, Montin, Voisin, J. Luys and others, in Paris; Lombroso, Tamburini, Sepilli and others, in Italy; Heidenhan and von Fränkel, in Germany; Gessman, Obersteiner and Kraft-Ebing, in Austria; Broberg and Fred. Björuström, of Sweden, are some of the names of recent authors abroad who treat upon this subject as a distinct branch of science. The experiments at Salpêtrière, conducted under the guidance of Prof. Charcot, have gone to the scientific world in detail for some years, and an International Congress of Hypnotism, experimental and therapeutic, was held at Paris from August 8 to 12, 1889, attended by distinguished men from Russia, Holland, Switzerland, France and other countries, where papers were read upon the propriety of interdicting, by law, public exhibitions of hypnotism, and for regulating its use or practice by legal statutes, as well as upon other phases of the science. The Paris *Revue de l'Hypnotism* is entirely devoted to this science.

In the Medico-Legal Society in January, 1889, the chair called attention to the medical neglect

of this subject, and named a committee to make investigations through the year and report their labors to that body. The majority of the committee did not go forward with the work, and the committee was reorganized, but have, so far as known, made no report, if even they have done any work whatever since their reorganization.

At the recent session of the Psychological Section of the British Medical Asssociation, held at Leeds August 15, 1889, under the Presidency of Dr. Hack Tuke, Dr Auguste Voisin, one of the physicians of la Salpêtrière, Paris, made a communication upon the treatment of insanity and neurosis by hypnotic suggestion and on the application of the method to the moral and instinctive perversion of backward and imbecile children, in which he is reported to have said that, until within the last few years, no serious attempt had been made in this direction, and that it was generally supposed that the insane could not be hypnotized. He had been able to develop this method in his hospital and private practice. Catalepsy ought to be carefully avoided, because the hypnotized individual ought to be able to preserve the use of his senses, especially of hearing. He was convinced that hypnotism was only useful when it was possible to make use of suggestion; and he was firmly of opinion that, as Braid had said, the hypnotic state originated in the nervous system of the hypnotized person. The basis of hypnotic treatment and of suggestive therapeutics detailed the various categories of the insane with regard to whom he had made observations. By this treatment he had cured persons suffering from hallucination and delusions, and from disturbances of special and general sensation. Suicidal ideas and acute and furious mania had disappeared under the use of this method. Cases of insanity were cited which had only been calmed after several hours. The treatment had also succeeded in the mania and agitation observed during the catamenia. Patients in this category had even remained asleep for from six to eight days. The method had also succeeded in dipsomania and in morphinomania. He had also been fortunate enough to cure obstinate cases of onanism in this way, and had applied the method *á la moralization des enfants dépravés*. He had thus completely transformed their habits of thought, and had brought them to love the good, whereas formerly they had loved only the evil. He had also succeeded in curing amenorrhœa in the insane, which was a frequent cause of nervous and mental troubles; he particularly insisted upon this point as proving it was possible to influence the functions of the sympthetic system. The relapses were not more than one-tenth of the cases treated, and this was probably due to the repetition of treatment over a few months. However, the results were definite, and he hoped the practice would be tried in England and have good results.

He said that for success in the hypnotizing of patients many attempts were frequently necessary. Hence he could not give a suitable demonstration at Wakefield; but his place at Paris was open to all the physicians of the Continent. It was immoral to hypnotize healthy persons, being only proper in the case of the diseased. He repeated his statements as to the ailments which could be serviceably treated. For success varied processes were often necessary.

The importance of the subject cannot well be overestimated. Our judicial tribunals are wholly unprepared for the investigation of crimes thus committed.

A prominent judge upon the criminal bench of this city has, as it has been said, expressed doubts as to the existence of such a state as the hypnotized condition, which would affect responsibility for acts committed in that condition.

The public mind cannot be said to recognize it, and the learned and honest judge reflects popular opinion and popular ignorance of the subject.

It is doubtful if the legal profession, as such, are *en rapport* with the scientific truths of this branch of science, as recognized in France judicially in the tribunals.

It is probably true that three-fourths, if not more, of the medical profession in this country are ignorant of what has been demonstrated at Sâlpetrière, and what is recognized as scientific truth at this moment in all foreign schools or universities of learning as to this phenomena. It is no longer an open and disputed question in France, Austria, Italy, Russia, Germany. It is an accepted scientific fact. What is now studied is its phenomena, its problems, its sequella. It is a recognized fact; but what are its phenomena and limitations, is the remaining question.

The questions raised by the editor of the *New York Ledger* are immensely significant and of the greatest importance to the race.

How far can hypnotism, properly administered, be used as an incentive to higher education?

How can it be used as a moral remedy to correct evil habits, bad practices or evil inclinations?

How far can it be used as a means for moulding character and lifting the aspirations to nobler ideas and higher planes of action and of life?

These are the questions of the hour, and these the subjects which should arrest the attention of the learned committee of the Medico-Legal Society.

The Humboldt Publishing Company of this city have taken up the subject, and have published the work of Prof. Fred. Björnström, of Stockholm Hospital, translated by Baron Nils. Posse, M.G., of Boston.

Chapter xi of this work treats of "Hypnotism and the Law." We quote:

Hypnotism comes in contact with the law at more than one point, and many and intricate are

the medico-legal questions which it has already raised. The most important of these questions are:

1. Can the hypnotized be physically or mentally injured by hypnotism?
2. Can the hypnotized fall victim to crime?
3. Can the hypnotized be used in the service of crime as a ready tool without a will?
4. Are the hypnotized responsible?
5. Should hypnotism be prohibited?

We regret that want of space prevents our giving the whole of the chapter which contains an answer to these questions.

The American Journal of Psychology has devoted more space and attention to this subject than any scientific journal on this side of the sea. Its editor is Prof. G. Stanley Hall, President of Clark University, and this journal, while not reproducing an original article from an American author upon this topic, so far as we can recall, has devoted considerable space in its psychological literature to "Hypnotism," as a subject or subdivision, and in this department has noticed and reviewed very much of the recent foreign literature of this department of science, and has also noticed quite generally what has appeared in our American and in the foreign press on this topic.

Prof. Stanley Hall is perhaps one of the best educated and equipped men this side of the Atlantic to lead in these investigations, outside of organized bodies or societies.

His journal must take notice of and record all discoveries, especially as to judicial or medico-legal questions arising affecting responsibility or related to criminal anthropology.

Dr. Ed. J. Cowles, of McLean Asylum, and Dr. Wm. A. Noyes, of the Experimental Station there, are qualified eminently for this work, while Fred. Peterson, M.D., Frank H. Ingram, M.D., M. Allen Starr, M.D., of New York, and others of the junior rising medical men, will doubtless do valuable work in this domain in the near future.

We learn that Dr. Jastrow proposes to prosecute psychological research in the University of Wisconsin; that Dr. Cattell intends similar studies in the University of Pennsylvania; Dr. Wolfe in the University of Nebraska; Dr. James at Toronto; and that Prof. Ladd, of Yale, and Prof. James, of Harvard, will continue their important investigations in psychological and psychical research.

We look for important advances along the line in the coming years of 1890 and 1891.

The importance of these investigations upon medical jurisprudence, upon the tribunals and courts of justice is recognized abroad. Is it recognized here?

Much of what seems now a mystery of motive of action, so pertinent to legal and criminal responsibility, must, in some cases, be involved in this enquiry,

The recent startling and, in many respects, almost incomprehensible case, in which the Hon. Ray Hamilton was so strangely affected, may be shown to be due to the well-defined phenomena of hypnotism.

It is difficult to understand certain phases and complications, in that, as in other curious and remarkable cases, to which our attention has been recently drawn, except by a study of the psychical phenomena of hypnotism.

A common and almost universal error is the popular impression that only weak, sickly, nervous persons, and especially hysterical women, were susceptible to hypnotism. This is a popular fallacy and error. Björnström says, upon this subject:

"Later experiences, and particularly the elaborate statistics of Liebault of Nancy, have shown that almost anybody can be hypnotized. A difference, however, must be made between those whom it is easy and those whom it is difficult to hypnotize.

"Among the former, belong without doubt the hysteric; but otherwise physicial weakness gives no special predisposition. The willingness of the subject, his passivity and power to concentrate the thought or attention on the intended sleep have more importance. Thus it has been found that even the strongest men from the lower classes (mechanics, laborers, soldiers,) are more easily put to sleep than intelligent persons, who voluntarily or involuntarily let their thoughts wander to various objects which distract their attention. It will often be found that those who cannot be hypnotized in the first, second or third *séance*, yet succumb to renewed patient effort."

It was the opinion of Dr. Edward Payson Thwing, as stated to the writer, who had conducted many experiments, that it was doubtful if there was any person who could not be hypnotized, who had sufficient will power to concentrate the thoughts upon a subject, to remain mentally passive, who would not mentally oppose or combat the influence of the hypnotizer, or who would mentally yield to it. That after long and repeated trials, under favorable conditions, with patient effort, every one would ultimately succumb.

It is a subject which should not be longer neglected or ignored, and to which the earnest attention of advanced students of medical research is earnestly suggested to meet the popular demand for light upon the science, and researches regarding its phenomena is now the duty of such of our medical men who are competent to grapple with the subject.

THE management of the surgical clinic in the University Halle has been entrusted to Professor Oberst and Docent Dr. Krause, as the successors of Prof. Volkmann, recently deceased.

DOMESTIC CORRESPONDENCE.

A Small Solid Tumor in the Left Inguinal Region Caused by a Fish-bone.

To the Editor:—The following case seems to me worthy of publication from a diagnostic standpoint, the more so as our works of pathology and surgery give us very little information on this subject.

C. I., æt. 63 years, began to notice an enlargement in the left inguinal region about the end of last February, which at times caused some slight pain, and during the last two months seemed to increase rapidly in size. Dr. I. B. Rice, of this place, was kind enough to send the patient to my office, stating that, though he had not come to a definite conclusion, he had some apprehension that it might be of a malignant nature. On examination I found a hard, slightly nodular tumor, situated about 2 inches above Poupart's ligament, running parallel to it and about the size of a large thumb. It was not specially painful on pressure and could apparently be lifted off from the peritoneum. Examination per rectum revealed nothing abnormal, no connection between the bowels and tumor could be traced. As it was so hard and not really painful on pressure, an abscess was excluded in the diagnosis; it was also too solid for a lipoma. The thought of a foreign body entered also into our speculation, but then we expected more pain and some fluctuation. Taking the age of the patient into consideration, the circumscribed, hard and nodular condition of the tumor, I must confess that the diagnosis of a cancer could not easily be dismissed from my mind. I thought it, however, a wise plan to keep the diagnosis in suspense until the knife would unravel the secret. On August 6, 1889, I made an incision about 2½ inches long over the swelling through the obliqui muscles, and found that the tumor was really formed by the thickening of these muscles. This infiltration was again caused by a fish-bone lying in a vertical direction over the transverse muscle. It was not encapsuled, nor was there any sign of former or present suppuration. The parts really presented such a fresh appearance as if the bone had been pushed in there shortly before the operation.

Foreign Body in the Right Bronchus.—Drs. Smith and Cheadle, after reporting a case (*Med. Chirurg. Trans.*, Vol. lxxi, p. 113), give statistics of thirty cases of foreign body in the bronchus. In sixteen cases the foreign substance was lodged in the left and in fourteen cases in the right bronchus, thereby upsetting the statement that foreign bodies usually find their way into the right bronchus. The following case may deserve publication for the sake of statistics:

I. R., of Woodville, O., æt. about 11 years, showed symptoms of croup on the last of December, 1888. As he had similar attacks a number of times before and was each time treated by Dr. Busch, no special apprehension was at first felt. But as some days after the symptoms, instead of abating, increased in severity, the doctor questioned the family whether the boy had not eaten something that might have entered into his air passages. They could not think of anything at the time, but the next morning they told the doctor that they remembered having seen him eat hickory nuts shortly before his symptoms of croup set in. I saw the boy on January 10, 1889. Examination of both lungs revealed nothing abnormal; at least, if there was any sound indicating the presence of a foreign substance it was muffled by the croupous breathing. Auscultation of the trachea also did not give us any more light in the case. Tracheotomy was decided upon and I was assisted by Dr. H. Busch, of Woodville, and Dr. Wm. Busch, of Genoa, O. In two similar operations which I had made a few years ago, I succeeded readily in extracting the foreign bodies from the bifurcation with a long probe, the end of which was bent to a small hook as used for the extraction of foreign bodies from the nose or ear. I might mention that, after having tried the forceps advised in our surgical works, I have worked with more advantage with this simple probe. After I had introduced it in this case about a dozen times down to the bifurcation without any result and had examined the larynx carefully, it appeared very much to us as if we were fishing in troubled waters. We were almost ready to give up all search when the thought occurred to my mind that the body might perhaps be lodged in one of the bronchial tubes. Immediately I pushed the probe down into the right bronchus, where I felt some hard substance lodged tightly, so that on withdrawal a small part of the hook broke off. I was nevertheless able to pull up a piece of hickory nut shell the size of which was over ½ inch square. Patient made a good recovery.

M. STAMM, M.D.

Fremont, O.

Disinfection by Sulphur.

To the Editor:—In your JOURNAL of February 8th I find an editorial on the "Correct Official Instructions as to Disinfection With Sulphur," in which article I find the following statement: "For a room 10 feet square use 3 pounds of sulphur, moistened with alcohol, *in an iron pan* placed in a tub containing a few inches of water, to avoid danger from fire."

I desire to call attention to a great improvement on the old iron pan, which I have discarded long since as cumbersome, dangerous, unhandy and troublesome. In the place of this pan I have a light sheet iron stove made, much after the style of a tinner's furnace, with a double bottom,

the lower one of which is raised some three or four inches from the floor by suitable legs. On the one side of this little furnace, on a level with the upper bottom, is a small vent, say 1 inch by 3 or 4 inches, for air, with a proper damper. A sheet-iron projection, with the edges turned up on all sides, is attached to the furnace in front and a little below the air-hole, to catch any coals that might fall out during use. The top of the furnace is simply a tight-fitting sheet-iron cap with a small pipe introduced on the one side of it, with a damper. To the whole apparatus is attached an ordinary bucket bail, for transferring it from place to place.

You now have a round furnace, say 6 or 8 inches in diameter, 14 to 16 inches high, with legs to keep it off the floor or carpet, an opening on one side below for air, and a tight-fitting top with a short 2-inch pipe in the cap. All you have to do is to remove the top and throw in a good bed of charcoal, on top of which you place the sulphur; add a little alcohol, replace the cap, open your dampers and touch a match, and you are ready for business; and besides you have a cheap, simple, complete and safe practical furnace that can be carried any place, and which I will guarantee will do its work well, and which can be kept going *ad lib.* by adding charcoal and sulphur when needed.

The entire outfit should not cost over three or four dollars, and will last for years, and can be safely carried any place, while in action or not.

This outfit is placed in the hands of the sanitary policeman, who keeps it at the fire department, where a supply of charcoal and sulphur are kept, and is ready for use on a moment's notice.

Very respectfully yours,

R. HARVEY REED, Health Officer.

Mansfield, O., February 10, 1890.

NECROLOGY.

Dr. Charles S. Wood

Died at his residence in New York City of chronic nephritis, February 1, 1890. He was born at Litchfield, Conn., February 27, 1825, and had but limited advantages of education in his youth. Until he was 26 years of age he taught school in Litchfield. He received his degree from Jefferson Medical College, Philadelphia, in 1851. At the breaking out of the war he offered his services as surgeon, and was attached to the Sixty-sixth regiment, New York Volunteers, but was subsequently promoted a surgeon, U. S. V. He had served in the Army of the Potomac, and was in most of the hotly-contested battles. Subsequently his service was transferred to California, where he organized and had charge of one of the military hospitals. He resumed his medical practice in 1867 in New York City, where he resided until his death. He was a frequent delegate to the American Medical Association, and was a representative of the New York State Medical Association, of which he was one of the founders, to the Ninth International Medical Congress at Washington, D. C. At the time of his death he was just entering upon his second term as President of the New York County Medical Association. He was also an ex-President of the New York Medico-Legal Society, and of the N. W. Medical and Surgical Society, as well as a member of similar other organizations.

As a physician he was esteemed for his practical turn of mind, his industry and his candid dealings with patients.

Sir William Gull, M.D.

Dr. William Withey Gull, a court physician and eloquent lecturer at Guy's Hospital, died January 29th, in his 75th year. He it was who carried the Prince of Wales through his attack of typhoid fever in 1871. In 1872 he was rewarded with a baronetcy and an appointment as an extraordinary physician to Queen Victoria. He had a fashionable and lucrative practice during the last fifteen years. He was President of the Clinical Society, D.C.L. of Oxford University, Goulstonian lecturer. His writings were chiefly on neurological subjects.

Sergius Botkin, M.D.

Dr. Sergius Botkin, the eminent Russian surgeon and medical writer, died at Mentone, Dec. 24, 1889, at the age of 58. His career during the past thirty years has been a most brilliant one, as writer, teacher, organizer of institutions and official. He was the body-physician of two Emperors, and yet the notices of his death recite invariably that in him the best friend of the poor of St. Petersburg has been taken away. He had the best of professional training in Paris and Bernard, Virchow, Ludwig, and at home under Pirigoff, whom he succeeded in many of his official appointments about 1861. His success as a teacher, at the Military Academy of St. Petersburg, in its medical department, as professor of therapeutics and clinical medicine, is said to be illustrated in the fact that not less than twenty of his pupils have been made professors in various Russian colleges. He was, without doubt, the best known of his country's professional men, outside of Russia.

Charles MacMillan, M.D.

Dr. Charles MacMillan, formerly Consul to Rome, died in Washington, January 8, after a short illness from pneumonia. During the late war, he served with distinction on the staff of

General Grant and in other capacities, and after the war was continued in diplomatic public life until after Grant's term in the Presidency closed. During recent years he has been in private practice at the Capital, and has served as medical referee to the Bureau of Pensions.

Dr. Hermann Brehmer,

the originator of the celebrated sanitarium for phthisical patients at Goerbersdorf, died December 23d of pneumonia, contracted during the influenza prevalence in Germany. It is stated that not less than 13,000 pulmonary cases resorted to his institution for treatment by him during his thirty years' incumbency at that place.

Sad Ending of a Health Trip.

Dr. E. R. Brownell, of East Hartford, Conn., died by his own hand, by shooting, December 28th, while on a visit to Barbadoes. He had gone to that point on account of ill-health, but not finding the relief he was in search of, became the victim of despondency.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

EXPOSITION OF PHARMACEUTIC, SURGICAL AND SANITARY PRODUCTS AND APPLIANCES—NOTICE TO EXHIBITORS.

The forty-first annual meeting of the American Medical Association will be held in the city of Nashville, commencing Tuesday, May 20th, and continuing till Friday the 23d. In connection with the meeting of the Association there will be held the usual exposition of pharmaceutic, surgical and sanitary products and appliances. This exposition is expected to be one of the largest and most interesting exhibits of the kind ever held. Pharmacists and others intending to exhibit their manufactures, etc., should address Dr. J. Berrien Lindsley, Chairman of the Sub-Committee on Exhibits, Nashville, Tenn., at once, as a large attendance is probable; and though the space available for exhibits is considered quite ample, the local committee desires to exercise care and deliberation in assigning space and arranging the exposition so as to present everything in the most attractive and effective manner. Choice of space will be given in accordance with date of application. For the accommodation of exhibitors the Committee on Exhibits has secured for a reasonable time an option on a building as suitable as can be obtained for an exposition of this character. This building is near the city postoffice and custom-house, on the widest thoroughfare in the city, convenient of access from all points, and only five minutes' walk from the place of meeting of the Association. It is all on one floor, a one-story brick building, detached, and well lighted, with large area of floor and wall space. To defray the expenses of renting this building and the other incidentals connected with the exhibition, each exhibitor will be required to pay an entrance fee of $10. This will entitle him to 25 square feet of space. For each additional square foot 50 cents will be charged. The committee will consider themselves as the agents of exhibitors for the mutual convenience of all concerned, but they will assume no responsibility for the safety of exhibits beyond the exercise of careful and vigilant attention. If insurance of any kind on exhibits is desired, it should be procured by the owner.

Applications for space must be made previous to the third Tuesday in April. Unless such a number of applications as will be a guaranty against loss is secured by the third Tuesday in March, the committee will abandon the effort to arrange for an exhibit. The local profession and the officials of the association are making every effort to secure a large attendance of physicians from all parts of the Union, and with every promise of success. An additional inducement to exhibitors is offered in the fact that the Tennessee Druggists' Association meets in Nashville at the same time, and will be in session from the 21st to the 23rd of May. This meeting of druggists is expected to be the largest ever held in the States.

The building selected for the exhibition is the Amusement Hall, Broad street, near Spruce, on the line of electric cars, connecting with all parts of the city and suburbs. It is also directly on the line of the Overland (dummy) Railway, running to the new reservoir, past a number of the forts and battle-fields of the civil war, through a charming country to the beautiful Glendale Park. The hall will be at the service of exhibitors from May 14th to 27th, thus giving ample time for arranging and getting ready to leave. The exposition should be opened Monday, May 19th, and continue the entire week. If there should be any surplus over expenses from the exposition, it will be contributed to the Rush monument fund of the American Medical Association.

The following classes of applications will be entertained:

1. Medical books and stationery, charts and diagrams, busts, portraits, engravings, photographs, etc.
2. Hospital and ambulance plans and models.
3. Surgical instruments and supplies, general and special (gynecic, obstetric, orthopædic, laryngeal, optic, ophthalmic, dental, etc.).
4. Microscopes, analysis outfits and electro-galvanic apparatus.

5. Pharmaceutical products.
6. Rubber goods applicable to medicine and surgery.
7. Invalid furniture.
8. Invalid foods.
9. Sanitary appliances, as ventilators, filters, w. c. basins, traps, and similar necessities, and disinfectants.

Applicants for space should state the character of their proposed exhibits, that they may be assigned to their respective groups. The subcommittee reserve the right of rejection in case of apparent reason.

J. BERRIEN LINDSLEY,
Chairman Sub-Com. on Exhibits.

Nashville, Tenn., February 6, 1890.

MISCELLANY.

THE Municipal Council of Paris has ordered that the sum of 40,000 francs be placed at the disposal of the 20 Mayors for the relief of families afflicted by the epidemic of influenza.

HEALTH IN MICHIGAN.—For the month of January, 1890, compared with the preceding month, the reports indicate that influenza, pneumonia, pleuritis and membranous croup increased, and that typho-malarial fever, inflammation of brain, cholera morbus, typhoid fever (enteric), dysentery, inflammation of kidney, inflammation of bowels, whooping-cough, diphtheria and smallpox decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity was less, the relative humidity and the day and night ozone were more.

Compared with the average for the month of January in the four years 1886–1889, influenza, pneumonia and measles were more prevalent, and typho-malarial fever, cholera morbus, cholera infantum, dysentery, inflammation of brain, membranous croup, typhoid fever, scarlet fever, cerebro-spinal meningitis, diphtheria and remittent fever were less prevalent in January 1890.

For the month of January, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was much higher, the absolute humidity was more, the relative humidity was less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of January, 1890, at 61 places, scarlet fever at 62 places, typhoid fever at 48 places, and measles at 27 places.

Reports from all sources show diphtheria reported at 4 places more, scarlet fever at 2 places less, typhoid fever at 9 places less, and measles at 5 places more in the month of January, 1890, than in the preceding month.

The Secretary of the State Board of Health says: "La grippe" is reported by a few of their observers, and, apparently, some call certain types of cases of the prevailing epidemic "intermittent fever;" but, even though its causation and symptoms are somewhat like those of intermittent fever, "influenza" is undoubtedly the best name for the disease, and it is so reported on 98 per cent. of all the weekly reports by Michigan physicians received at the office of the State Board of Health for the week ending February 1; the most sickness being caused by influenza, pneumonia, bronchitis and rheumatism.

LETTERS RECEIVED.

Dr. C. R. Early, Ridgway, Pa.; Dr. Henry B. Baker, Lansing, Mich.; Dr. William Porter, St. Louis, Mo.; Dr. Frank H. Potter, Buffalo, N. Y.; Dr. H. C. Hemenway, Kalamazoo, Mich.; E. Merck, New York; J. Movius & Son, Boston, Mass.; Dr. Fred. Humbert, Alton, Ill; Dr. L. Swift, Ft. Barrington, Mass.; I. Haldenstein, Thos. Leeming & Co., New York; The North American Practitioner, Chicago, Ill.; Parke, Davis & Co., Detroit, Mich.; The Upjohn Pill and Granule Co., Kalamazoo, Mich.; King's Medical Advertising Agency, New York; T. W. Hannaford, London, Eng.; Dr. J. T. McShane, Carmel, Ind.; Johnson & Johnson, New York; The Cibils Fluid Extract of Beef Co., Boston, Mass.; Gustave E. Stechert, New York; Battle & Co., St. Louis, Mo.; Dr. J. F. Force, Minneapolis, Minn.; F. C. Lewis, Catskill, N. Y.; The New Table Co., St. Louis, Mich.; S. H. Parvins' Sons, Cincinnati, O.; F. Crosby Co., New York; Dr. C. S. Pixley, Elkhart, Ind.; Dr. I. S. Stone, Lincoln, Neb.; Gladstone Lamp Co., New York; Dr. John H. Clark, Mechanicsburg, O.; Dr. C. H. Wilcox, Berwick, Ill.; Dr. Kilpatrick, South Omaha, Neb.; Sharp & Smith, Chicago, Ill.; Dr. Wm. B. Davis, Cincinnati, O.; Dr. T. H. Nott, Goliad, Texas; Dr. M. T. Brockney, Indianapolis, Ind.; Dr. Wm. H. Danforth, Worcester, Mass.; Dr. L. L. McArthur, Chicago; Oneita Spring Co., Utica, N. Y.; The Drevet Mfg. Co., New York; Dr. E. Ingals, Chicago; Dr. Madison Reece, Abingdon, Ill.; Dr. W. R. Tipton, New York; Dr. H. J. Cowan, Danville, Ky.; A. B. Powl, Keene, N. H.; E. Steiger & Co., New York; Dr. Geo. W. Stoner, Detroit, Mich.; Typothetæ, Chicago; Dr. W. D. Mann, Buffalo, N. Y.; Dr. N. G. Dill, Desota, Ind.; Dr. O. L. Williams, Oak Cliff, Tex.; Dr. W. T. Corlett, Cleveland, O.; Ward Bros., Jacksonville, Ill.; Provident Chemical Works, St. Louis, Mo.; R. W. Gardner, New York; Dr. G. Cowan, Danville, Ky.; Dr. John H. Gilman, Lowell, Mass.; Dr. W. L. Schenk, Osage City, Kan.; Dr. A. L. Carroll, New York; Dr. Leartus Connor, Detroit, Mich.; Dr. John Shrady, New York; J. Walter Thompson, New York; Dr. Wm. W. Pearce, Waukegan, Ill.; Dr. J. W. C. Smith, Benton, Miss.; Dr. J. H. Goss, Athens, Ga.; Dr. J. A. Freeman, Millington, Ill.; Dr. W. E. Burtless, Hickory, N. C.; Dr. R. S. Brice, Keota, Ia.; M. Kreedy, Fredonia, Ill.; J. Astier, Paris, France; Dr. H. H. Thorpe, Liberty Hill, Tex.; College of Physicians and Surgeons, Baltimore, Md.; Dr. Thos. S. K. Morton, Philadelphia; Dr. D. W. Prentiss, Washington; Armour & Co., Chicago; M. Gratz, Munich, Bavaria; Gustave Fischer, Jena, Germany; L. Bruck, Sydney, N. S. W.; Dr. W. Franklin Coleman, Chicago; T. W. Hannaford, London, Eng.; Dr. S. Solis-Cohen, Philadelphia; W. H. Scheiffelin & Co., New York; Dr. John N. Mackenzie, Baltimore, Md.; Horlick's Food Co., Racine, Wis.; Dr. A. R. Cain, Senecaville, O.; G. Masson, Paris, France; Galvano-Faradic Manufacturing Co., New York; Dr. M. R. Fosgate, Auburn, N. Y.; The Boston Mailing Co., Boston; B. Westermann & Co., New York; Dr. Henry Sherry, Chicago; Dr. V. P. Gibney, New York; Dr. R. J. Hart, Charter Oak, Ia.; C. M. Caswell & Co., Boston; Dr. M. W. Rozzell, Pryorsburg, Ky.; Dr. W. E. Ward, Laingsburg, Mich.; Dr. L. L. McArthur, Chicago; The Plimpton Mfg. Co., Hartford, Conn.; Dr. James P. Marsh, Troy, N. Y.; Doliber, Goodale & Co., Boston; Dr. John D. S. Davis, Birmingham, Ala.; Dr. John M. Dodson, Chicago; Wm. R. Warner & Co., New York; Col. J. H. Baxter, Washington; Dr. Joseph Martin, Jefferson Barracks, Mo.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 8, 1890.

Surgeon W. H. Jones, ordered to the U. S. S. "Swatara."
Medical Director A. Hudson, died February 7 at Mare Island Hospital, Cal.

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ORIGINAL ARTICLES.

INJURIES OF THE BLADDER DURING LAPAROTOMY, INCLUDING A REPORT OF SIXTY-SEVEN CASES.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. REEVES JACKSON, A.M., M.D.,

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Case 1.—On December 5th, 1888, I performed laparotomy for what was supposed to be a pelvic abscess in a woman 25 years old who had been married three years and had never borne children. The history comprised pelvic pain of long standing and varying degree, with occasional discharges of pus through the rectum—the latter feature being of doubtful accuracy. Two distinct swellings were detectible, one on either side of the uterus, the one on the left being the greater, and about the size of a billiard ball. The uterus and adjacent structures were quite immovable.

On completing the abdominal incision, the omentum was found to be attached to the anterior abdominal wall, and when the adhesions were partially separated it was discovered, further, that both the omentum and abdominal wall were adherent to the bladder. The adhesions were not especially firm, and were readily separated by means of the fingers and the handle of a scalpel. Through the opening thus made there appeared a thick wall of tissue, pinkish red in color, which roofed over the entire contents of the true pelvis, and the uterus, ovaries, and tubes could be neither seen nor directly felt. I pressed the finger-points in every part and in various directions in the endeavor to find a spot of such character as to indicate the presence of underlying fluid, but without success. Under bimanual exploration I could feel with greater distinctness than before the hard masses on either side of the pelvis, but their nature was uncertain and their removal impracticable; therefore, I reluctantly closed the wound, and dressed it in the ordinary way.

On the following day the dressings were found to be saturated with urine containing some blood, and only a small amount had been withdrawn by the catheter. This too was bloody. Evidently the bladder had been ruptured during the separation of the adhesions to its walls. The fistulous opening was between two of the upper stitches, and not more than three inches below the umbilicus.

A sigmoid catheter was placed in the bladder. Through this bloody urine escaped for four days. A lesser amount also came through the fistula. The presence of the catheter caused so much irritability that I removed it, and subsequently an ordinary soft catheter was introduced every two hours. During the succeeding twenty-four hours a full amount of urine appeared to be withdrawn and none came through the abdominal wound, but on the evening of the sixth day it again flowed from the fistula, and the permanent catheter was replaced. The quantity of blood had gradually lessened, and at the end of the seventh day disappeared entirely. Urine continued to escape through the fistula in steadily diminishing amount until the 28th of December—twenty-three days after the operation—when it ceased and the opening was permanently closed.

The foregoing experience taught me how easily such an accident may occur, and in view of the frequency with which laparotomies have been performed—amounting to many thousands—I thought it highly probable that it had occurred oftener than the few published cases would seem to indicate. For the purpose of testing the matter I addressed inquiries to more than seventy prominent abdominal surgeons, at home and abroad, and although more than one half of those to whom I applied failed to respond, I succeeded in obtaining the details of many hitherto unpublished cases.

Cases 2 to 10.[1]—In 1880, Gustave Eustache published an account of ten cases of bladder injury, one of which occurred in his own practice, with recovery of the patient. Of the others, Tauffer had one and the patient recovered; Péan one, the patient also recovering; Henry Smith one, the patient dying; Spencer Wells two, with one death and one recovery; Thornton three, one of whom died, and the other two recovered; Bantock one, with recovery.

[1] Journal des Sciences Médicales de Lille, 1880.

Case 11.—Dr. Gustave Eustache,[2] Lille, France. Operation May 14th, 1878. There were extensive adhesions, and the bladder was carried upward. At a point nearly as high as the umbilicus it was incised for nearly three-fourths of an inch, permitting the escape of urine into the abdominal cavity. The bladder was sutured with catgut, the abdominal cavity cleansed and the wound closed. The patient wholly recovered.

Case 12.—Dr. T. G. Thomas reported an interesting case to the American Gynecological Society[3] in 1881, in which during a laparotomy undertaken for the removal of an ovarian cyst he found the bladder expanded over the front aspect of the tumor "upward to a point midway between the umbilicus and ensiform cartilage, and laterally well down into the lumbar regions." The extent of tumor surface thus covered by the displaced bladder was so great as to preclude the use of the trocar for the purpose of evacuating the cystic contents, and the adhesions between the viscus and the tumor were so firm, and their limits so vaguely defined, that it seemed as though the effort to remove the tumor would have to be abandoned. However, as the result of a happy thought, the operator cut through the anterior wall of the bladder, so that one or two fingers could be inserted. In this manner the extent of the viscus was ascertained, the adhesions were cut away from the tumor side, and soon the attachments were entirely severed. The tumor was then removed in the ordinary manner.

There remained however the embarrassing presence of an immensely hypertrophied bladder with an incision through its wall. The operator met this difficulty by using the abdominal walls as a pair of clamps to bring the vesical walls securely together externally, so that if leakage should occur it would not take place in the peritoneum. The abdominal wound was closed from above downward with silver sutures. When the wound in the bladder was reached the needle, which had an eye near its extremity, was passed "through the abdominal wall, then through one vesical wall, then through the other, and lastly through the opposite abdominal wall," and this was continued until the whole opening was traversed by sutures. A Sims' catheter was kept in the bladder, and the patient made a regular and rapid recovery.

In the paper of Dr. Thomas, embodying the foregoing case, details more or less full were given of seven other cases, not including those collected by Eustache. Of these I have thought it well to reproduce the principal features.

Case 13.—This case occurred in the practice of Dr. Richard Neale, of London, and was published by him in the *Medical Times and Gazette*, November 28th, 1868. The patient had an abdominal tumor. An exploratory incision was made in the middle line from above the umbilicus to one inch above the symphysis pubis. The tumor appeared to be covered with altered serous membrane. Adhesions were found to be so universal that no attempt was made to remove the tumor and the abdominal wound was closed. The next day urine was discovered discharging through the wound, and a long male catheter passed upwards from the urethra appeared at the abdominal incision as high as the umbilicus. It was found that an incision an inch and a half long had been made in the bladder. This was closed by fine wire sutures twenty-six days after the operation, the abdominal wound being reopened for several inches for the purpose. Eleven days afterwards all the urine was passed by the urethra, except on one or two occasions when, in consequence of over-distension the bladder gave way in one spot, which gradually healed. The patient died six months after the operation.

Case 14.—Reported by Dr. Bergman.[4] The operation was undertaken for the removal of a polycystic tumor which could not be extirpated because of adhesions. In cutting through the peritoneum the bladder, which was lying toward the left side of the uterus and between two hemispheres of the cyst was opened. The wound in the viscus was closed with silk sutures, cut short, and then the abdominal incision was closed. Death occurred in thirteen hours.

Case 15.—Dr. B. Stilling.[5] Upon making an incision the operator found no peritoneal cavity, the peritoneum having become everywhere incorporated with the tumor, or the abdominal viscera. The bladder was elongated and pushed over to the left side. It appeared like a cyst between the intestines, and was punctured by the trocar. The tumor, which was subsequently found to be a dermoid cyst of the ovary, could only be partially removed. The wound in the bladder was closed with wire sutures. Death occurred fifteen hours after the operation.

Case 16.—Dr. X. (Reported by Dr. T. G. Thomas.) In this case the operator performed a laparotomy for the removal of a large uterine fibroid. When the abdominal cavity was opened a shining, muscular looking mass was found extending over the tumor and reaching up as high as the umbilicus. The operator, supposing this to be a thick layer of false membrane, peeled it off from above down to the symphysis pubis. Then he discovered that he held one wall of the bladder in his hand while the other was still attached to the surface of the tumor. Having ascertained this he detached the posterior vesical wall, sewed the two together, and removed the underlying tumor. The patient did not rally and death ensued in a few hours after the operation.

[2] Archives de Tocologie, 1880, pp. 193, 277.
[3] Transactions, 1881, p. 267.
[4] Petersburger Medicinische Zeitschrift, 1869.
[5] Deutsche Klinik, for 1869.

Case 17.—Dr. Leroy McLean.[6] Before proceeding to the operation a large aspirating needle was introduced to the left of the median line and a quantity of fluid having the consistency and color of molasses withdrawn. The bladder was then evacuated. The incision extended from an inch below the umbilicus downward two and one half inches. At its lower angle, at a depth of three quarters of an inch, the operator cut into what appeared to be a cyst in the abdominal wall which contained about two drachms of pale fluid. The incision was extended upward and downward, and a multilocular tumor having two strong omental adhesions was removed. It was then discovered that the bladder, which was strongly adherent to the abdominal wall, had been cut through on both its anterior and posterior surfaces. The incisions were closed with interrupted silk sutures, and the abdominal wound with silver wire. The patient was placed in bed, and at the end of an hour two ounces of urine was removed by means of a catheter, which was permitted subsequently to remain in the bladder. The patient rallied and at the end of ten hours her condition seemed favorable. A few hours later, however, she began to sink, and death occurred thirty hours after the operation. Post-mortem examination showed good primary union of the incision in the bladder, no escape of urine into the abdominal cavity, and no peritonitis.

Case 18.—Dr. E. Noeggerath.[7] When the incision was made through the abdominal walls a dense layer of cellular tissue was encountered, but no peritoneum. A trocar was introduced and about a pailful of colloid material with a large amount of fat was withdrawn. The tumor was strongly and extensively adherent to the abdominal walls. The operator cut into a cystic cavity the apex of which reached upwards to within 2½ inches of the umbilicus. Upon examination this was found to be the bladder, which had been carried upwards, and become so attached to the anterior wall of the abdomen as to appear like a portion of the cyst itself. The opening was sewed up with catgut, and the bladder kept empty with a catheter. It was impossible to remove the tumor, owing to the intimate adhesions which existed between the cyst wall and the peritoneum, and which caused them to seem like a single structure. The patient died in twenty-six hours, apparently from acute anæmia caused by hæmorrhage from a soft mass about half as large as a kidney, which occupied one of the pouches of the tumor, and which was accidentally injured. The autopsy showed that there was no peritonitis.

Case 19.—Dr. William Goodell.[8] The operation was for the removal of a large rapidly growing fibroid of the uterus which was found to be extensively adherent. In endeavoring to separate the adhesions the operator made an opening into what was apparently a cyst, but which was soon recognized as the bladder. The organ was an inch or more in thickness, spread over the tumor with which it was incorporated, and reaching as high as the navel. It was separated from the tumor downward to a point sufficiently low to permit the application of a ligature to the tumor, which was then removed. The wound in the bladder was closed with catgut sutures, and the one in the abdominal wall in the ordinary way. The patient died from shock a few hours after the operation.

Cases 20 and 21.—Dr. William Goodell.[9] These cases happened in very difficult ovariotomies, complicated with intraligamentary cysts In both cases the rent was closed by continuous catgut sutures, and both recovered.

Case 22.—Dr. Gilman Kimball,[10] Lowell, Mass. Operation for the removal of an immense fibroid of the uterus. A ligature could not be applied about the pedicle, and an attempt was made to cut the tumor away piecemeal. About one-half of the tumor was thus removed, during which procedure the bladder was cut into. The patient died.

Case 23.—Dr. Gilman Kimball.[11] The operation was made for what was thought to be an ovarian cyst. When the tumor was reached it was found to be a fibrocyst of the uterus. The stump was transfixed, ligated and dropped. At the end of three or four weeks urine began to escape from the lower angle of the wound. The flow increased, rather than diminished, and the patient died of exhaustion at the end of seven weeks.

Case 24.—Dr. Gilman Kimball.[12] Case of supposed ovarian tumor, but which proved to be a fibrocyst of the uterus. A catheter was used in order to guide as to the position of the bladder. A ligature was applied, apparently safely, above the bladder. In less than a week urine appeared through the lower part of the incision. At the end of four weeks the patient died of abscess of the parotid gland.

Case 25.—(Reported by Dr. Gilman Kimball).[13] The case occurred in the practice of a physician in Providence, R. I., in 1876. The tumor was a fibroid of the uterus, complicated by adhesions in every direction. Two holes were cut into the bladder, both of which were closed with silver sutures. At the end of two or three months the sutures began to discharge from the urethra, rectum, and the line of the incision The patient finally made a perfect recovery.

[6] Medical Record, February 8th, 1879.
[7] Trans. New York Obstetrical Society, 1880.
[8] Trans. American Gyn. Soc., 1881, p. 274.
[9] Private Letter.
[10] Trans. American Gyn. Soc., 1881, p. 271.
[11] Loc. cit.
[12] Loc. cit.
[13] Loc. cit.

Cases 26 and 27.—Dr. Thomas Addis Emmet, New York. Dr. Emmet states that he has twice cut into the bladder during laparotomy. In both cases the wound was closed with fine silk sutures, and there was no trouble afterwards.

Case 28.—Dr. Geo. W. Porter, Providence, R. I. Operation performed December 16, 1887, for removal of a fibroid in the anterior wall of the uterus. On cutting through the abdominal wall the first cavity entered was the bladder, which had been carried up to within 1½ inch of the umbilicus, a fact of which the operator was not aware before the operation. The bladder was firmly adherent to the anterior abdominal wall, so that after opening the organ it was difficult to discover the limits of the adhesions between the visceral and parietal peritoneum. No urine entered the abdominal cavity. Before going further the operator brought together the walls of the bladder, which were greatly hypertrophied, the muscular layer with a continuous catgut suture, and the serous coat with the Lembert suture. After the bladder wound was closed the abdominal incision was extended upward, but it was found that the appendages could not be removed, as had been intended, and the wound was closed. A soft rubber catheter was left in the bladder for several days. Cystitis followed, but it ceased in about three weeks, and the patient had no further trouble.

Case 29.—Dr. E. C. Dudley, Chicago. In October, 1886, during a laparotomy for colloid ovarian tumor which drew the bladder up nearly to the umbilicus, the viscus was wounded, its walls being incorporated with the tumor. The bladder wound was closed with buried catgut sutures, and the remainder of the wound with deep silver sutures. A further exploratory operation near the umbilicus demonstrated the malignant and irremovable nature of the growth. A sinus remained at the site of the bladder wound through which urine was discharged upon the surface of the abdomen until her death, which occurred seven months later after the removal of the greater portion of the tumor by another surgeon.

To the report of this case Dr. D. adds: "It is my custom to pass a sound into the bladder before opening the abdomen. In this case, however, the pressure of the tumor upon the pubes prevented the sound from passing as high as it might have been passed had I suspected the bladder displacement. I would suggest as the danger signal which should deter one from opening the bladder, the vascular condition of its walls, which always causes bleeding from the numerous small vessels to an extent rarely observed in simply going through the abdominal wall."

Case 30.—Dr. A. J. C. Skene, Brooklyn, N. Y.[14] The operation was one of combined ovariotomy and hysterectomy. The bladder was adherent to the cyst wall, and was dissected away far enough to permit the application of a clamp below the uterus and the most dependent part of the cyst. The uterus and cyst were then removed. After the operation the catheter was used two days, and after that the patient urinated without trouble and passed the usual quantity of water. On the tenth day urine was discovered escaping by the side of the clamp. The catheter was then used at regular intervals, and the patient was not permitted to make any voluntary efforts. The clamp was removed on the fifteenth day. It was then found that the bladder was open on the right side at the site of an adhesion which was the result of a cellulitis and abscess that years before had discharged through the bladder. A year after the operation the patient was perfectly well.

Case 31.—Dr. A. J. C. Skene. The case occurred in a hospital patient, in which an operation was made for pyosalpinx with many adhesions. The bladder, which was covered with adhesions, was opened. The patient recovered, but has a vesico-abdominal fistula which has never healed.

Case 32.—Dr. W. W. Potter, Spokane Falls, W. T. The operation was done in 1876, for the removal of a fibrocystic uterus weighing over 6 lbs. The tumor was firmly pressed into the pelvis, and adherent to all of the surrounding structures. In separating the bladder from the tumor the wall of the viscus was torn to the extent of 1½ inch. The rectal wall was also perforated in two places. The openings were all closed with silver wire. The bladder wound healed completely, and the sutures came away through the urethra some weeks later. The rectal wounds also healed, one of the sutures escaping through the anus, and the other through the abdominal wound. The patient recovered, and is still alive and well.

Case 33.—Dr. A. Martin, Berlin. Tumor of the ovary with extensive adhesions. The mischief was discovered at once, and the wound closed by silk sutures. The patient recovered without a single bladder symptom.

Case 34.—Dr. A. Martin. A myomotomy with pyosalpinx. In this case the bladder healed at once without any disorder, the patient having free micturition from the moment of the operation. She died from infection by the pyosalpinx.

Case 35.—Dr. A. Martin. Operation for malignant papilloma of the bladder. This was removed and the bladder closed. The patient had free spontaneous micturition subsequently until she died of general carcinosis.

Case 36.—Dr. Paul F. Mundé, New York. Hysterectomy for myoma. The bladder was drawn high up on the tumor, and was injured during the application of the elastic ligature. The bladder wound was sewed together. The patient died of suppression of urine forty-eight hours after the operation.

Case 37.—Dr. James B. Hunter, New York.

[14] Diseases of Women, p. 534.

Operation performed October 22, 1888, for removal of a cystic tumor. The bladder was firmly adherent to the abdominal wall, and was cut directly into at a point in the median line about halfway between the pubes and the umbilicus. There had been a previous operation for diseased ovary by another operator. The wound was closed with catgut. The operation was then continued and a small cyst removed. A catheter was kept in the bladder for a few days. The patient had no trouble whatever from the wound in the bladder.

Case 38.—Dr. Chas. T. Parkes, Chicago. In making the primary incision through the abdominal wall for the purpose of uncovering an undetermined tumor, a cut was made in the bladder about 2 inches long. This was closed immediately by means of the Lembert intestinal suture and gave no more trouble. The urine was taken through the catheter every six hours for a week.

Case 39.—Dr. Chas. T. Parkes. Operation for pelvic abscess. After laparotomy the abscess was aspirated, and then an opening torn into it by expanding the jaws of a forceps. It was not known that any damage was done to the bladder until the urine was taken by catheter some hours after the operation. The fluid withdrawn was mainly blood. The presence of blood in the urine persisted for four or five days, but no other complication arose. The inference made was that the bladder wall had been injured by the forceps.

Case 40.—Dr. Joseph Eastman, Indianapolis, Ind. The operation was done July 4, 1888, for removal of a large ovarian cyst. Extensive adhesions bound the tumor to the abdominal walls and bladder. The latter was opened by the scissors at the lower angle of the first exploratory incision. The opening was subsequently made larger in order to secure more perfect surgical adjustment of the parts, and was 3 inches in length when ready to be closed. Closure was effected by means of two rows of catgut suture. A glass drainage tube was kept in the abdominal cavity for two weeks and a Skene's catheter was kept in the urethra for the same length of time. The patient recovered and suffered no evil effects from the bladder injury.

Case 41.—Dr. Joseph Price, Philadelphia. Operation for removal of an ectopic pregnancy two weeks after rupture of the tube. The tissues were all structurally changed, and friable. The bladder was opened, and the patient died at the time of operation.

Case 42.—Dr. A. C. Bernays, St. Louis, Mo. Operation for removal of a solid fibroid tumor of the uterus weighing 15 lbs. A small puncture was made in the bladder. The edges of the puncture were caught in a Tait's hæmostatic forceps, and secured by a ligature. No evil resulted. The patient died of septicæmia on the eleventh day. At the autopsy the perforations could not be found on examining the interior of the bladder.

Case 43.—Dr. M. D. Mann, Buffalo, N. Y. A supra-vaginal hysterectomy for multiple uterine fibroids. A wire clamp was applied closely to the utero-vaginal junction, and the uterus amputated above. It was then found that a small section of the bladder had also been cut away. When the slough separated urine came from the vagina, and also through the abdominal wound. The os uteri was closed, and later the abdominal fistula also. At first, the bladder held urine only about one hour, but by and by the organ seemed to dilate, and the patient could sleep all night without rising.

Case 44.—Dr. William P. Chunn, Baltimore, Md. Operation done in March, 1888. Operation for removal of an impacted fibroid uterus. The bladder was found adherent as high up as the umbilicus, and was cut open. The bladder incision was enlarged and the whole hand introduced into the organ, when the mistake was discovered. The tumor was irremovable. The bladder was stitched into the abdominal wound in such manner as to bring the cut edges of the viscus and of the abdominal wall respectively in apposition by means of a single row of sutures which were inserted further from the edges of the wound than usual, the object being to cause a wide strip of bladder peritoneum to adhere to a correspondingly wide strip of parietal peritoneum, and thus shut off the bladder wound from the abdominal cavity. A slight fistula remained for a short time, but finally healed, and the patient fully recovered, and became able to urinate naturally.

Case 45.—Dr. T. G. Thomas[15] mentions a case in which, eight days after ovariotomy, about one pint of urine began to pass daily through the abdominal opening, the lower angle of which had been kept open for the purpose of washing out the peritoneum. The patient recovered and the fistula healed of itself.

Case 46.—Dr. Charles Carroll Lee, New York, case of uterine sarcoma. The wall of the bladder, which was very attenuated, was drawn up on the face of the tumor, and was unrecognized and inadvertently cut into. The bladder wound was closed with a lock-stitch of medium-sized catgut, which barely included the edge of the mucous membrane. A Sims' catheter was kept in the bladder during the first three or four days. Complete union was obtained, with no subsequent cystitis.

Case 47.—Dr. Charles Carroll Lee, an ovarian cyst with thick walls, around which there had been much inflammation, became attached to the bladder. In attempting to dissect off the bladder it was opened. The treatment pursued was the same as in the foregoing case, and the result equally satisfactory.

[15] Diseases of Women, p. 264.

Case 48.—Dr. Howard A. Kelly, Philadelphia, Pa., operation done September, 1887, for interstitial salpingitis with pyosalpinx; enucleation very difficult. About two days after the operation stillicidium of urine and fæcal flow began following the track of the drainage tube. For many weeks urine and bubbling gases escaped intermittently, when both ceased entirely and the patient made a complete though tedious recovery.

Case 49.—Dr. Howard A. Kelly, operation of hystero-myomectomy for fibroma, performed November 30, 1887. The uterus, with tumor, delivered through abdominal incision. The bladder was catheterized during the operation in order to determine its position which was elevated on the anterior face of the tumor. It was dissected off with care and the tumor embraced at its base in Kœberle's serre-nœud and cut away, leaving the pedicle treated extraperitoneally with clamp. Within a few days urine escaped from the lower angle of the incision. The opening contracted down to a small fistula which spontaneously closed after a few weeks. The recovery was complete and in no way retarded by the bladder injury.

Case 50.—Dr. Howard A. Kelly, operation June 2, 1888, for removal of several pints of stinking pus in the peritoneum, due primarily to tubal disease. An incision two inches above the symphysis pubis passed through the agglutinated peritoneal coats, half an inch thick, and entered the bladder. There was at once a slight flow of clear water. Beneath this the pus sac was opened, emptied and drained. The bladder injury was not recognized at the time of its occurrence. The patient had a constant flow of urine from the wound until she died, three and a half months later, of meningitis.

Case 51.—Dr. Howard A. Kelly, operation made November 28, 1888, for removal of a large unilocular ovarian cyst weighing about 50 lbs., which had grown in nine weeks. The cyst was densely adherent to the pelvis and was removed with the whole of the omentum up to the transverse colon. During the convalescence the abdomen remained scaphoid, and at no time was there any disturbance whatever due to peritoneal inflammation. The patient was catheterized but once after the operation, and then with great care as to cleanliness of catheter and mouth of urethra. The temperature was normal up to the seventh day, when it went up to 100°. On the following day there passed, with much pain, a slough which appeared to be the mucous membrane of the bladder, two inches long. After this the patient suffered much with vesical pain and passed blood and pus in the urine for two weeks, at which time she had recovered from the bladder trouble, but was taken with fever and delirium, which developed into mania, for which she had to be confined in an insane asylum, where she now is.

Case 52.—Dr. John Homans, Boston, Mass.,[16] operation October 5, 1881. In the removal of a non-adherent dermoid tumor, weighing 22 lbs., the bladder was accidentally incised. A piece the size of a thumb nail was cut off from the elongated fundus, and the viscus split through both its anterior and posterior wall for about two inches. The bladder contained no urine. The organ was considered anomalous, as it had not contracted behind the pubis when emptied. The detached piece was removed. The wounds in the bladder were closed with continuous silk suture, care being taken to not include the mucous membrane in the stitch. A catheter was kept in the urethra. The patient recovered and had no subsequent trouble.

Case 53.—Dr. John Homans, operation for double papillomatous ovaries in a patient who had been tapped eighteen times in five years for removal of ascitic fluid. The bladder was opened and the wound closed with twelve interrupted silk sutures. A catheter was kept in the bladder seven days. In this and the foregoing case the sutures were left shut up in the abdominal cavity. Result, recovery.

Case 54.—Dr. John Homans, on January 22, 1887, hysterectomy for uterine fibroid. A portion of the bladder wall an inch in diameter was included in the serre-nœud. Urine came from the wound for four weeks. A catheter was kept in the bladder.

Case 55.—Dr. G. G. Juliard;[17] during an ovariotomy there occurred a transverse rupture of the bladder 12 centimetres long, in the posterior wall. It was closed with catgut sutures applied after Lembert's method, avoiding the mucous lining. A permanent catheter was employed six days. The cure was complete at the end of three weeks.

Case 56.—Dr. Walter F. Atlee, Philadelphia,[18] operation for removal of cystic tumor of the ovary, which had been tapped four times. The opening of the abdomen revealed a deep red soft tissue, instead of the whitish-blue ovarian cyst. It was the bladder, which was adherent to the cyst wall and dragged up almost to the navel. In effecting the separation of the adhesions the viscus was torn so that the little finger could be passed into the opening, and large gushes of urine were seen to take place into the cavity of the abdomen, although a catheter was used immediately before the operation by an experienced nurse, who said that the bladder was empty, and that she could push the instrument far into the viscus. The bladder wound was closed with a plaited silk thread, which was introduced by means of two needles and brought together in such a manner as to fold inward the edges and bring the peritoneal surfaces into apposition.

[16] Boston Medical and Surgical Journal, February 16, 1882; also Medical Record, January 15, 1887.
[17] Archives de Tocologie, September, 1883, p. 567.
[18] American Journal Medical Sciences, Vol. lxxxv, 1883, p. 119.

The abdomen was then cleansed and the wound stitched and dressed in the usual mode. A self-retaining catheter was left in the bladder two days. There was no further trouble, and the patient made a satisfactory recovery.

Case 57.—Dr. S. C. Gordon, Portland, Me. A laparotomy was made for the removal of an ovarian tumor to which the bladder was attached, and by which it was drawn up. In separating the adhesions the bladder was torn at least three inches. The rent was closed with catgut, the serous edges being turned in. The urine was subsequently withdrawn regularly and no trouble resulted.

Case 58.—Reported by Dr. S. C. Gordon, who says: "This case occurred in the practice of a colleague of mine. The bladder was torn extensively, so that he stitched the sides into the abdominal wound and drained by tube until he could remove the tube, and the fistula finally closed."

Case 59.—Dr. Joseph Taber Johnson, Washington, D. C. During a laparotomy a cut was made straight into the bladder. The wound was stitched up at once and no trouble followed.

Case 60.—Dr. E. W. Cushing, Boston, Mass.,[19] operation done October, 1888, for pyosalpinx and pelvic abscess, attended by intestinal and omental adhesions. The day after the operation urine appeared in the drainage tube, and the urine drawn by the catheter was bloody. No motion of the bowels could be obtained for a week, and then the bowel appeared to have been rent, or to have sloughed, for fæcal matter and gas soon afterwards escaped through the drainage tube. After doing very well for a fortnight after the operation obstinate constipation occurred, followed by violent diarrhœa. The urine then appeared to find its way backward into the bowel. Patient died twenty-three days after the operation.

Case 61.—Mr. Lawson Tait,[20] operation for ovariotomy and hysterectomy at St. Peter's Hospital, Albany, N. Y., September 10, 1884. The uterine pedicle was secured by clamp; a portion of the bladder wall was included with the pedicle, and a vesical fistula resulted. The operator stated to the class before whom the operation was done that it would not make any difference to the patient's recovery, and it did not. The fistula had perfectly healed by November 30, and March 1, 1889, the patient was in excellent health.

Case 62.—Mr. Lawson Tait, ovariotomy with extensive adhesions in a woman aged 55 years; operation performed in June, 1888. A large hole was torn in the bladder, which was stitched up with a continuous suture, and after months of closing the stitch gave trouble; a urinary fistula formed. The patient, who was residing in Italy, appealed to Mr. Tait for assistance. He advised the surgeons to wait no longer, but to open the sinus and remove the stitch. Instead, they allowed the patient to go on suffering until the stitch came away of its own accord, which it did in April last.

Case 63.—Mr. Lawson Tait, operation on April 13, 1889, for a congenital cyst. The bladder was opened by mistake for the peritoneal cavity. The opening was stitched and it healed in the usual fashion, and the patient recovered without any trouble.

In a letter detailing the foregoing cases Mr. Tait says: "I have repeatedly included a portion of the base of the bladder in the wire of the clamp and have never had any trouble with it at all, except that the fistula remains open for a few weeks, but it has always healed. My impression all through has been that a great deal too much is made of lesions of the bladder in operations of the abdomen and pelvis."

Case 64.—Dr. Washington L. Atlee, Philadelphia, Pa. Dr. Robert Battey, in a letter informing me that the accident had never occurred to himself, says: "I have vividly impressed upon my recollection the graphic account given by the late W. L. Atlee, before the Obstetric Section of the American Medical Association, of how, in a complicated ovariotomy, he tore the adherent bladder literally into shreds. I know not whether these statements of Dr. Atlee were ever put into print, but the courage and honesty with which he made the public statement of the case for the benefit of his colleagues elicited both admiration and applause."

Case 65.—Billroth, Vienna,[21] operation for the removal of a large fibro-cystic tumor with the fundus of the uterus. In separating the bladder it was opened. Patient recovered in three weeks.

Case 66.—Billroth.[22] In removing a cancerous left ovary the intestine and bladder were found infiltrated, necessitating enterotomy and cystotomy. Result unknown.

Case 67.—Hartig, operation March 6, 1885, for removal of a non-hæmorrhagic intramural fibromyoma the size of a pregnant uterus at full term. An intended enucleation of the tumor was found to be impossible, by reason of the tumor being located too deeply in the pelvis. The uterus was amputated supra-vaginally by Schroeder's method. In cutting the knot of the rubber ligature a vein was injured, causing profuse bleeding. When the vessel was ligated it was noticed that a portion of the fundus of the bladder, about three-quarters of an inch in length, had been included in the constrictor, and was so thinned by the compression as to need repair. In doing this the bladder was pierced by a needle and a few drops of urine escaped. Repair was made by

[19] Annals of Gynecology, March, 1889, p. 272.
Albany Medical Annals, Vol. vi, p. 1.

[21] R. S. Sutton, letter from Vienna. Pittsburg Medical Journal, January, 1882.
[22] Sutton, Vienna letter. Obstetric Gazette, December, 1881.

running catgut suture in two stages. The patient died suddenly on the fourth day from secondary hæmorrhage, which, as the autopsy showed, came from the wounded vein, from which the ligature had become loosened. The closure of the bladder wound was found perfect.

The foregoing list is by no means complete, but the number of cases it includes—sixty-seven cases among forty-one operators—is sufficiently large to show that the accident is by no means infrequent.

Some surgeons manifest a reluctance to making known the various mishaps which occur in their operative work, in the belief, perhaps, that a knowledge of them will injuriously affect their reputation with their colleagues. I consider this an error of judgment. Surgeons should be honest as well as skilful, and their integrity is quite as likely to receive recognition as their dexterity, and certainly is of more value.

Considering the conditions under which bladder injuries may happen during laparotomy, it is not discreditable to any surgeon to meet with them, for they may not be due to any carelessness or lack of skill on his part. In many of the foregoing cases no possible degree of diligence could have averted the accident. Adhesions of the peritoneal surface of the elongated bladder to that of the anterior abdominal wall frequently cannot be known in advance, and their existence is only demonstrable after the viscus has been opened. The use of the catheter as a diagnostic means is not always available, because the compression of the bladder against the pubis may prevent the introduction of the instrument beyond that point. Certainly, however, this should always be attempted in any case of suspected difficulty, and would seem to be even a proper and unobjectionable routine method.

Another useful precaution is to avoid prolonging the abdominal incision far down towards the pubic bone until the opening into the peritoneum has permitted the relations of the bladder to be ascertained.

The mortality of the cases in which the bladder has been wounded is large, namely about 30 per cent.; but this is due to the complicated and serious character of the cases in which the accident has occurred, the consequently increased length of the operation and the greater danger from shock, rather than to the mere vesical injury. The latter, indeed, does not seem of itself to be very important as influencing the recovery of the patient; but, notwithstanding this fact, a urinary fistula adds greatly to her discomfort, and, occurring under such circumstances, must be productive of chagrin and annoyance to the surgeon.

Inasmuch as the bladder is recognizable with more difficulty when empty than when full, it would be better, in cases presenting doubtful features, to commence the operation with the viscus wholly or partly distended. When its position has become known, after the completion of the abdominal incision, it may be emptied by an assistant.

Treatment.—When it is known at the time of operation that the bladder has been cut or torn, the opening should be at once closed with a continuous suture of catgut or fine silk, applied so as to invert the edges of the wound and bring together the peritoneal surfaces. A permanent catheter ought to be used during the first two days. After the expiration of that time its constant use is usually unnecessary; and if the wound has been small—less than one inch in length—the instrument may be subsequently dispensed with. If, however, the wound has been large—exceeding two or three inches—the bladder ought to be artificially emptied as often as every three hours during three or four days additional. In all cases the catheter should be used so long as the urine contains blood.

In the case in which urine appears through the abdominal wound subsequently to the operation, at a time and under circumstances which might make it dangerous or inexpedient to reach the seat of the vesical injury, the catheter ought to be used either continuously or at short intervals, for the purpose of lessening the amount of urine which escapes through the fistula, and thus aid in the closure of the latter. If, however, the fistulous opening should show no disposition to close after two or three months, the edges ought to be freshened to the depth of half an inch or more and stitched together.

In exceptional instances it may be expedient to affix the wounded edges of the bladder within those of the abdominal incision, in the manner detailed by Thomas and others; but as this method must interfere, to some extent, with the subsequent contractility of the bladder, it is not to be commended as a usual practice. The suturing and "dropping" of the vesical wound is the better method.

THE TEETH AND ORAL CAVITY OF PREGNANT WOMEN.

Read in the Section of Oral and Dental Surgery, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN S. MARSHALL, M.D.,
OF CHICAGO.

From time almost immemorial, pregnancy has been recognized as having a deleterious effect upon the teeth; and this opinion has become so general that it has been crystallized into the familiar adage—"for every child a tooth." All writers upon obstetrics and the care of pregnant women, recognize the fact that during the periods of gestation and lactation women are more liable to suffer from diseases of the teeth and neu-

ralgia of the facial region, than at other times; but the causes, prevention or mitigation of these diseases has received but little attention; in fact, it seems to be considered by most of them that they are among the inevitable consequences of gestation and that little can be done to relieve them.

With this view I do not fully agree, for I believe *much can* be done to prevent or relieve the suffering incident to caries and the loss of the teeth, and the neuralgic conditions of the face and mouth so common at this period. But in order to appreciate the causes and the treatment of these disorders, we must have in mind the changed conditions of the organism. The pregnant state is characterized by many and varied changes in the general system and in special organs, the most marked of which are those of the uterus, the genitals, and mammary glands, but which it is not necessary for us to take time to describe, as they are generally well understood. The changes which bear the closest relationship to our subject, are those of nutrition affecting the condition of the blood, the bones, the teeth and the excretions and secretions.

Pregnancy usually exercises a favorable influence upon nutrition; after the third or fourth month the appetite improves, adipose tissue is laid on and the body weight is progressively increased, so that at the completion of gestation, it is about one-thirteenth greater than before.[1] Many times, however, the reverse of this is met with; nutrition is so disturbed as to cause considerable emaciation and general debility.

The *blood* is increased in volume during the second half of gestation, as was demonstrated by Spiegelberg and Gescheidlen[2] in experiments upon pregnant bitches. Authorities, however, are not agreed as to changes in the character of the blood. Andral,[3] Nasse,[4] Meyer[5] and others claim that the watery elements and the white corpuscles are increased and the red corpuscles diminished. Ingerslev[6] could detect no diminution in the number of the red corpuscles; while on the other hand Fehling[7] found the hæmoglobin and the red corpuscles increased. Hypertrophy of the left ventricle, of temporary character, sometimes occurs as the result of increased labor thrown upon the heart consequent upon the augmentation of the blood mass. This was first made known by Larcher[8] in 1828. Venous congestion, varices, and swelling of the lower extremities and arterial hyperæmia of the upper half of the body is a frequent accompaniment of pregnancy. The causes of these conditions are not fully understood, but were attributed by De Cristoforis[9] to pressure of the gravid uterus upon the iliac veins preventing the return of blood to the inferior vena cava, and pressure upon the descending aorta, thus obstructing the normal flow of blood to the lower extremities and causing arterial hyperæmia of the upper portion of the body.

Changes in the constituent elements of the *bones* are of common occurrence as a result of malnutrition. Dalton[10] says: "Next to the chloride of sodium, the phosphate of calcium is considered the most important mineral ingredient of the body. It is met with universally in every tissue and every fluid"—and "whenever the nutrition of the bone during life is interfered with from any pathological cause, so that its phosphate of calcium becomes deficient in amount, a softening of the osseous tissue is the consequence, by which the bone yields to external pressure and becomes more or less distorted." Softening or decalcification of the bones undoubtedly takes place in a limited extent in many cases of pregnancy. In fractures occurring during gestation, union is often delayed, sometimes until after delivery. Padieu[11] describes a case in which fractures of the tibia and fibula occurred nine days after the suppression of the menses, and in which union was delayed until the end of gestation. The process of union began ten days after delivery and was completed at the end of a month. On the other hand, the bones of the extremities frequently increase in length, and osteophytes are sometimes formed both intra- and extra-cranial.

According to Förster,[12] in a little more than one-half of the cases of pregnancy examined after death, there were found deposited upon the inner surface of the skull, thin lamellæ of a bone-like formation, composed of phosphate and carbonate of calcium, and measuring from $\frac{1}{6}$ to $\frac{1}{2}$ of a line in thickness. These formations are most commonly found upon the frontal and parietal bones, in the neighborhood of the sulcus falciformis and the arteria meningia media, and usually occur after the third month. These formations are not, however, exclusively an accompaniment of pregnancy, for they are frequently found associated with tuberculosis, and might therefore be classed as effects of insufficient nutrition, rather than of over-nutrition.

The *pelvis*, though looked upon at all other times as a comparatively solid framework, frequently becomes relaxed in its articulations during pregnancy so that the sacro-iliac and pubic joints become movable. Luschka[13] demonstrated that these articulations were true joints. Lenoir[14] found in twenty-two pregnant women between the ages of 18 and 35, movement of the sacro-iliac and

[1] Hirst's American System of Obstetrics, p. 353.
[2] Ibid., p. 345.
[3] Annals de Chymie et de Physique. Juellet, 1842.
[4] Archives of Gyn. Bd. x, p. 338.
[5] "Untersuchungen uber die Zeianderungen des Blutes in der Schroangerschaft."
[6] Centralb. f. Gyn., 1879, p. 635.
[7] Archives of Gyn., Bd. xxviii, Heft 3, p. 454.
[8] Hirst's Amer. Syst. of Obstetrics, p. 346.
[9] Ibid.
[10] Dalton's Physiology, fifth edition, p. 58.
[11] Journal de Médicine et de Chirurgie pratique, 1887.
[12] Handbuch der pathelog. Anat., Vol. ii, p. 945.
[13] Die Anatomie des Menschlicken, Bukens. Tubingen, 1864.
[14] Hirst's American System of Obstetrics, p. 341.

pubic articulations. Occasionally such movement is so great as to make locomotion difficult or impossible.

Lawson Tait[15] is authority for the statement that the *thyroid gland* frequently increases in size during pregnancy, and that he noted in districts where goitre was endemic, and in women in whom there existed the predisposition, pregnancy may produce a temporary form of the disease or furnish the exciting cause for the development of the permanent disease.

The *spleen*, in all probability, is increased in size during gestation.[16] The functions of the *kidneys* are also heightened and in consequence of this they become somewhat larger.[17] The urine undergoes change both in quantity and quality; the aqueous elements are increased in consequence of the augmentation in the blood mass and the high arterial tension. Winckel found no change in the amount of urea, sodium chloride, sulphates and phosphates daily excreted. Chalvet and Barlemont, on the other hand, found the chlorides increased in quantity and the phosphates, sulphates, urea, uric acid, creatin and creatinin diminished in amount. Lehmann and Donne[18] have suggested that the cause of this deficiency was due to the extra demand for these substances in the development of the fœtus. Glucose and albumen are not infrequently present in the urine during pregnancy. An increase in the *salivary* secretions is often a noticeable symptom. *Ptyalism*, when present, manifests itself early and usually disappears spontaneously between the third and fourth months. It occasionally persists, however, in an aggravated form during the entire period of gestation and even for several weeks after, and the amount secreted may be so great as to endanger the life of the patient. The qualitative changes in the saliva during pregnancy are sometimes quite marked. The water is increased, while the organic and inorganic elements are diminished. Schramm reported one case in which the ptyalin was entirely absent. In those cases in which excessive ptyalism is manifested the buccal mucous membrane is more or less inflamed, the parotid, submaxillary and sublingual glands are swollen and tender, and quite painful when their functions are especially excited. Fetor is not present, and the absence of this symptom distinguishes it from mercurial ptyalism. The cause of this disorder is in all probability a reflex neurosis, and it frequently reappears in successive pregnancies. *Gingivitis* is another common accompaniment of pregnancy, and is often present when there is no indication of salivation. Pinard is of the opinion that it is more common among multiparæ than primiparæ. This opinion is based upon seventy-five cases, of whom forty-three were multiparæ and thirty-two primiparæ. In the former the disorder was present thirty-one times, in the latter fourteen times. Gingivitis is characterized by redness and tumefaction of the gums, and a tendency to bleed on slight pressure or friction, as in mastication or the use of the tooth-brush; while the secretions of the mucous gland are often decidedly acid in reaction, as may be easily proved by litmus paper. Treatment should consist of saline cathartics and astringent and antacid mouth-washes, and thorough cleanliness of the mouth and teeth.

Phagedenic pericementitis is occasionally present during pregnancy, and right here let me call your attention to the fact that this disease is often associated with rheumatic affections, diabetes mellitus and albuminuria, but just how it is associated in relation to cause and effect with kidney affections, I am unable to say, but would suggest that it is due to the accumulation of effete products in the system, possibly of uric acid, urea and the like. This disorder is characterized by tumefaction of the gums, which have a purplish tint along the margins, the festoons are swollen and detached from the teeth, and bleed on the least provocation; many of the teeth are loose in their alveoli, from which pus constantly exudes, and in a majority of the cases examination of the roots of these teeth will show them to be more or less covered with calculus, the character of which is still in dispute, some claiming it is salivary, others serumal. After a little time the gums begin to recede from the necks of the teeth, and it is not by any means rare for this disease to progress so rapidly that one or more teeth are lost by the disorder before the completion of gestation. The disease usually persists after delivery, but not with such rapid progress as before. Treatment consists in removing the deposits from the affected teeth, incising the gums down to the bottom of each pocket to give drainage for the escape of the discharges, the application to the parts of a saturated solution of iodine in wood creosote, and the use of astringent and antiseptic mouth washes.

The changes in the *nervous system* due to the effects of pregnancy are many and varied, the character being determined largely by the individual susceptibility of the patient to nervous irritation. As a rule, the emotions are more easily excited than at other times. Some are bright and happy, others despondent, moody or peevish. Functional disorders of the special senses are not infrequent, vision may be impaired, the hearing affected, or perversions of taste and smell may occur. Neuralgic affections are quite common during pregnancy, and most frequently affect the face and head. Odontalgia, tic douleureux, local anæsthesia and paresis are the most common forms.

Odontalgia is generally the result of dental caries which penetrates to the pulp and sets up an

[15] Obst. Jour. of Great Britain and Ireland, 1875.
[16] Wood's Handbook Medical Sciences, Vol. vi, p. 5.
[17] Hirst's American System of Obstetrics, Vol. i, p. 334.
[18] Ibid., Vol. i, p. 354.

acute or chronic pulpitis, or may be caused (as recently stated by Dr. W. W. Allport[19]), by hyperæmia of the pulp, due to the augmented volume of blood, increased arterial pressure and capillary hyperæmia of the upper half of the body. In proof of this statement by Dr. Allport, I would call attention to the fact that a brisk cathartic will often relieve, or entirely control an attack of odontalgia, or a congestive headache, by simply relieving general arterial tension and local hyperæmia of the parts by depleting the circulation; this relieves the blood pressure upon the nerve filaments of the pulp or the meninges of the brain, and the pain ceases. Tic douloureux, local anæsthesia and paresis of the facial region are generally considered to be due to a reflex neurosis, but the point made by Dr. Allport is worthy of careful consideration. Odontalgia due to pulpitis can be controlled by devitalizing the pulp, and the tooth be made permanently useful by appropriate after-treatment; a temporary stopping is all that should be attempted until after delivery if the attack occur during the latter months of gestation, but in the earlier months there need be no fear, in a majority of cases, in performing a permanent operation if it be not too fatiguing.

Nervous disorders due to the changed condition of the system during pregnancy usually disappear soon after delivery, but they occasionally persist during lactation. The treatment of neuralgic conditions of reflex origin, and nervous disorders in general, should be relegated to the family physician, as they need general treatment and therefore come more especially within his province. Quinine, iron, or other general tonic treatment, however, is indicated, with change of climatic surroundings.

The statement has been made that softening and decalcification of the bones takes place to a limited extent in certain cases of pregnancy, but whether the change is due to a failure of the nutritive processes to supply the waste constantly going on in all the tissues of the body, or an actual resorption of the inorganic materials to supply these elements to the forming fœtus, I am unable to state, but am of the opinion that it is the result of both faulty nutrition and the lack of supply of the proper elements to the system. In some cases it is certainly the direct result of faulty nutrition incident to the pregnant state. In others inability to take food, as in those cases where for months the stomach is in such an irritable condition as to make it impossible to retain sufficient food to properly nourish the body; while in others it is the result of an improper diet.

Many women are in the habit of discarding from their aliment during pregnancy all those foods which contain an abundance of calcium salts, and restrict themselves, as nearly as possible, to a fruit diet, believing that by such practice the bones of the child will be imperfectly calcified, and thus parturition will be robbed of much of its suffering. There is no scientific evidence that such a result is obtained; while on the other hand, as in those cases affected with hyperemesis, though the child when born may be small and much emaciated, it has the appearance of being properly formed and its bones as dense as in the majority of normal pregnancies, and the fact seems to be pretty well established that the osseous framework of the fœtus is formed in such cases at the expense of the maternal organism.

We have no knowledge that a chemical analysis has ever been made upon the teeth of the same individual before and during pregnancy in cases like those just described; and without such an analysis it could not be dogmatically asserted that there was or was not a quantitative change in the inorganic materials of the teeth, but reasoning from analogy, we would expect to find the same conditions existing in the teeth that are undoubtedly present in the bones, and brought about by the same causes.

Clinical observation would seem to substantiate such a proposition, for every observing and thoughtful dentist of even limited experience could relate cases in which a material and an appreciable softening of the dentine occurred during the pregnant state of many of his patients. This condition is an important predisposing cause of caries, and is often present in adults and in school children of both sexes, as a result of overwork, anxiety or excessive mental strain.[20]

The principal exciting cause of caries during pregnancy, as in all other cases, is the ever-present lactic acid fermentation, but its action is greatly augmented by the changed conditions of the salivary and buccal secretions. The acids found in the secretions of the mouth as a result of the disorders incident to the pregnant state, are acetic, hydrochloric, uric and oxalic. Consequently in those cases where the dentine has been rendered abnormally soft—deficient in calcium salts—there is likely to be a very rapid breaking down of tooth structure during pregnancy and lactation.

Long tedious operations, like the restoration of form in decayed teeth with gold, are inadmissible during gestation. All operations upon the teeth at such times should be as free from pain and fatigue as is possible, from the fact that in certain cases miscarriage might be the result. Caries of the teeth can be arrested by the use of temporary fillings like Hill's Stopping, or oxy-phosphate cement, until such time as the patient is in condition to bear the nervous strain incident to large gold operations. Among the most valuable of preventive measures are a thorough and frequent use of the tooth-brush and floss silk at least three

[19] Paper on "Neuralgia," read before the American Medical Association, June, 1889.

[20] Jacob L. Williams, Journal Am. Med. Assoc., 1885.

times per diem, supplemented by tooth powders, and antacid mouth washes.

I am aware that I have not discussed this subject as its great importance would seem to deserve, and had time permitted, I should have been glad to have elaborated many points that have been only just alluded to. I trust, however, that some of these points may receive more extended treatment in the discussion that shall follow.

"The Argyle," cor. Michigan Ave. and Jackson St.

DRAINAGE IN ABDOMINAL SURGERY.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CHARLES BINGHAM PENROSE, M.D., Ph.D.,
OF PHILADELPHIA.

Drainage of the peritoneum, though one of the most important subjects in abdominal surgery, is yet one which still stands in a most uncertain position. The reason of this uncertain position is primarily a dread of evil consequences from the tube; a fear that the tube will act as a source of septic infection and death. Other less important reasons militate against the use of the drainage tube, but collectively they have but little weight when compared with the terror, which most surgeons feel, of introducing a dangerous element of septic infection in any case where a drainage tube is employed.

As long as this fear exists the abdominal drainage tube can never be viewed in a proper light. And it is one of my chief objects in presenting this paper, to attempt to place the subject in a more scientific position, by showing how groundless all such fears are, if the drainage tube is properly used.

But little light on this subject can be obtained by investigating the practice of noted operators. A very few operators—as Olshausen—altogether discard the abdominal drainage tube, asserting that it is in no case necessary. (*Die Krankheiten der Ovarien*, 1886.) Others—like Bantock and Tait—use drainage freely and with confidence, never allowing fear of evil consequences from the tube to affect their decision about its use in any case. Others—and perhaps the largest body—occupy a medium place; they dread the tube, but sometimes feel obliged to use it, because they dread more sepsis from absorption of undrained fluids in the peritoneum. The last hold a most unsatisfactory and a most unscientific position; and probably have the largest mortality after their operations.

If one surgeon, or class of surgeons, can use the abdominal drainage tube in a long series of cases, with a very small mortality—a mortality no greater than occurs in the same hands in a similar series of undrained cases, it certainly proves that the drainage tube properly used is not a source of danger. And it follows from this, that, if other surgeons have a much greater mortality when the tube is used than when it is discarded, the reason is that they do not employ the tube in a proper way.

The important point to observe, in the use of the abdominal drainage tube, is frequent and careful cleaning. Cleaning which can be performed by any neat nurse. If the statistics and practice of different operators are observed, it will be found that, in most cases, a large mortality and infrequent cleaning of the tube go together. We often are advised to make the first inspection of the tube not earlier than twelve hours after the operation—in some cases twenty-fours hours. An investigation of cases subjected to this plan of treatment will, by the mortality, show, unquestionably, the value of frequent cleaning. I will refer to one striking illustration of the truth of this remark. There appeared recently a paper on drainage in which the writer says, "the first inspection of the tube for fluid need rarely be made earlier than twelve hours after the operation." He then gives his mortality in a series of drained cases as over 50 per cent. Compare this advice and these statisics with those of Bantock, who operated without a death on a series of 45 drained cases in the Samaritan Free Hospital, and who advises that the drainage tube be cleaned every two or three hours; (*British Medical Journal*, June 30, 1888). Or with the statistics of Joseph Price, of Philadelphia, who uses drainage in about 50 per cent. of his cases of laparotomy, with a mortality as small as in the undrained cases, and who cleans the tube from every one to three hours. In my own practice, I have operated for disease of the uterus or its appendages, on 40 successive drainage cases with one death. I frequently have the tube cleaned as often as every half hour: and in introducing it, I think of it no more as a source of danger, than if I introduced an extra suture in the abdominal walls.

Many similar statistics could be given, which show that, in some hands, the drainage tube adds nothing to the mortality after laparotomy, and consequently that when it seems to increase the mortality, the cause is to be sought in the method of using the tube, and not in the tube *per se*.

No fixed time can be set for cleaning the abdominal drainage tube. It should always be cleaned when it is filled with fluid, and sometimes it is filled fifteen minutes after the patient has been returned to bed. By cleaning I mean the thorough emptying and drying of the tube, and the introduction of a fresh capillary drain if one is used.

Our object, after most cases of laparotomy, is to dry, as quickly and completely as possible, all the peritoneum beyond the neighborhood of the tube; and to do this the outward flow should be

as free as possible. Such, however, is not the case when the drainage tube is full of fluid, for the intra-peritoneal accumulation is then subject to a backward pressure equal to the weight of a column of liquid four to six inches in height. A pressure, in cases where there is no distension, sufficient, not only to stop the outward flow, but to cause a backward percolation of fluid between non-adherent intestinal loops. Therefore, to favor rapid occlusion of the general peritoneum from the sink in the hollow of the sacrum, and from the drainage tube tract, frequent cleaning is of the greatest importance.

I do not hesitate to say that, if a drainage tube is frequently inspected, and if all manipulations are performed with the strictest cleanliness, a patient, after laparotomy, is as safe, if not safer, with a tube than without one.

If we admit this fact, that a drainage tube in the abdomen need not be looked upon as a source of danger, we are in a proper position to decide the question: In what cases is drainage necessary?

The object of the drainage tube is the prevention of accumulations of fluid in the peritoneum. The dangers to be feared from such accumulations are septic changes, which may produce general or local trouble. These changes, if not pre-existing, are generally caused by septic matter introduced from without; but it is also very probable that infection may occur through the intestinal walls; especially if the intestinal coats are in a pathological condition from over-distension or other cause. At the same time, it must be remembered that the healthy peritoneum is a very rapid absorber; and large quantities of fluid may be absorbed before sufficient time has elapsed for septic decomposition to take place. A very rough idea of the absorbing power of the healthy human peritoneum may be obtained from experiments on dogs and rabbits; and, if we calculate proportionally for man, we find that the human peritoneum can absorb from five to twelve pints of fluid in one hour, or, in from twelve to thirty hours, a quantity equal to the body weight. (*Der Krankheiten der Ovarien*, von Robert Olshausen, 1886.)

Cases demanding drainage can be arranged under the following heads:

1. Where the operation has been of long duration and there has been much manipulation, and we fear excessive secretion from the irritated peritoneum.

2. Where extensive raw surfaces, or bleeding adhesions are left, or where we fear bleeding from any other cause.

3. Where there is existing peritonitis, or ascites.

5. Where septic matter has escaped into the peritoneum, or where portions of tumor are left.

5. Where there is a malignant disease, and we fear subsequent infection.

By excessive secretion from irritated peritoneum I mean more fluid accumulation than can be re-absorbed before septic changes take place. And, in this connection, we must consider, not only whether the peritoneum is in a condition to absorb fluids, but also whether the patient's condition is such as to stand such absorption; whether the emunctories are sufficiently active to excrete the absorbed material. For this reason drainage of the peritoneum is much more frequently indicated in old, than in young people.

No absolute rules for drainage can be given; and consequently there is always room for a difference of opinion in any case which comes under the preceding headings. The irritated peritoneum may not secrete excessively; or the blood from adhesions may not be too great to be absorbed, but if, in any case, there is a particle of doubt about such points, the drainage tube should be unhesitatingly used.

The drainage tube is not only of service in draining blood from the peritoneum, but, in cases where excessive bleeding is feared, it serves as an important indicator to the operator. It not only itself, for some reason, seems to act as a valuable hæmostatic, but it also enables the surgeon to detect undue hæmorrhage in time to check it. In three cases Tait has controlled hæmorrhage by the injection of perchloride of iron through the tube. (*Brit. Gyn. Journal*, August, 1887.)

The necessity for drainage depends to a great extent upon the operating surgeon. Skill, rapidity and neatness in operating, by diminishing exposure and irritation of the peritoneum, enable many surgeons to do without drainage in cases which would demand it in other hands. And for this reason the practice of no one operator can be taken as a guide. Every surgeon must determine for himself whether drainage is necessary in any case, and it is much safer for him to use the tube too frequently rather than too rarely.

I have thus far spoken only of one tube, not because we need to be limited to one drainage tube in abdominal surgery any more than in other branches of surgery; but because the great majority of abdominal operations are done for disease of the ovaries and Fallopian tubes, and consequently the seat of operation is altogether in the pelvis, the upper part of the peritoneal cavity being generally entirely undisturbed. For this reason, in such cases, the single straight glass tube drains not only the hollow of the sacrum—the natural sink of the peritoneum—but also the whole field exposed in the operation. But in other cases, as in general purulent peritonitis, it may be necessary to drain, in addition to the hollow of the sacrum, the renal gutters, or other parts of the peritoneum. And if the tubes are used, not only for drainage, but also for subsequent peritoneal irrigation, the use of two or

more tubes, placed wherever indicated, is of great value.

In some cases it is desirable to use a tube combined with a capillary drain of gauze or wick, or even gauze or wick alone, placed in strips from the cavity or part to be drained to the abdominal wound.

Capillary drainage is in many instances a most desirable method; possessing the advantages of promptness, thoroughness and complete exclusion of air; at the same time giving entire rest to the patient and to the parts surrounding the drain; and permitting more movement of the body. In such cases wicking answers better than gauze, since it acts as a faster drain, and is less liable to become incorporated with surrounding tissues, and thus render removal difficult. These drains can remain in place for several days—as many as ten or fourteen—if the superincumbent gauze is frequently changed and the discharges are not septic to begin with.

For discussion of this subject with report of cases see article by Ludwig Piskachek, *Medizinische Jahrbücher*, neue Vol. iii., Jahrgang, 1888.

The determination of the length of time during which the general peritoneum remains open to drainage is of importance in discussing the use of the abdominal drainage tube. Theoretically, an aseptic, unirritating drainage tube ought never to become shut off by adhesions from the general peritoneal cavity; since peritoneal adhesions imply more or less irritation. The length of time, therefore, during which the tube acts as a general drain depends on the condition of the tube and the character of the discharges, which are carried throught it. Tait (*Brit. Gyn. Journal*, August, 1887) says that irrigation of the peritoneal cavity through the drainage tube becomes impossible, on account of adhesions, seventy or eighty hours after operation. And this is probably the usual time in clean cases. That this time, however, is subject to very considerable variations, is shown by the following cases, which have occurred in my own practice.

In a case of purulent peritonitis where laparotomy was performed, and peritoneal irrigation was practiced through three tubes placed in the abdominal cavity, general drainage, and the possibility of general irrigation, ceased to exist twenty-two hours after the introduction of the tubes. (This case is reported in *Annals of Gynecology*, 1888.)

In a case of stab wound of the transverse colon, when the patient died of cerebral embolism seventy-six hours after laparotomy, the autopsy showed that there were no peritoneal adhesions around the tube, the peritoneum being dry and the tube perfectly free.

In a third case, of dermoid tumor, where general peritonitis appeared three days after laparotomy, the discharge from the drainage tube, which had for two days been very slight, suddenly increased, and for five days later large quantities of sanguinolent serum flowed continuously; showing that much of the peritoneum was still open to drainage even seven days after operation. A singular phenomenon occurred after an operation by Dr. Baldy of Philadelphia. Abdominal hysterectomy was performed for a uterine myoma. Ascites was present at the time of operation, and for eleven days afterwards from one to three pints of serum flowed daily from the drainage tube.

These cases are sufficient to show that the duration of general drainage depends to a great extent upon the nature and treatment of the case.

As has been said the chief immediate danger to be feared from a drainage tube is septic infection or septic peritonitis, and I have attempted to show how slight is the risk of such infection if proper care is taken of the tube. There are, however, other accidents, or sequelæ imputed to drainage, which, though not of immediate danger to life, are yet at least annoying, retarding convalescence, and in some cases, if uncured, ultimately causing death. And a fear of these minor dangers is often sufficient, in case of doubt, to turn the decision of the surgeon against the drainage tube.

Such accidents, or sequelæ, are:

1. The formation of local peritoneal adhesions around the drainage tube, and the persistence of a fibrous band in the site of the tube tract, which may cause subsequent bladder trouble, or intestinal strangulation.

2. The incarceration of omentum, or shreds from adhesions, through the perforations of the tube.

3. Prolonged suppuration from the drainage tube tract, or an incurable sinus.

4. Fæcal fistula from pressure of tube on intestine.

5. Ventral hernia resulting from imperfect approximation of fascia and muscles.

I will consider these real and imaginary sequelæ of drainage in the order in which they have been stated. Though local peritoneal adhesions may be more frequent in drainage cases, yet I have never observed that these patients complained subsequently of symptoms indicative of such adhesions, any more than patients in whom no tubes had been used. These adhesions generally disappear very quickly; and this is also the case with whatever fibrous band may follow the tube. Of course a discharging sinus, especially if an old one, exists as a firm organized structure, extending from the origin of the sinus, to the parietes; but even such tracts disappear after they cease to discharge. In order to cure ventral hernia, I have had an opportunity of reopening the abdomens of two patients in whom drainage had been used; and have consequently been able to determine the existence of any ad-

hesions or fibrous band which might have been produced by the drainage tube.

In the first case the primary operation had been done for double pyosalpinx and peritonitis. The glass drainage tube had remained in the abdomen for three days, being replaced by a rubber tube which was used for several days longer. The second operation, for the relief of the resulting hernia, was done two years later. The omentum was then found slightly adherent in the hernial sac; but there were no other peritoneal adhesions of any kind. The finger, introduced to the hollow of the sacrum, found no adhesions and no trace of the drainage tube tract.

In the second case, the primary operation was done for extra-uterine pregnancy. The glass drainage tube had remained in the abdomen for eight days, and was then replaced by a rubber tube which was used for two weeks longer. After removal of the rubber tube a discharging sinus remained unclosed for about three months. Here, more than in the first case, I expected to find some pelvic adhesions and some trace of the old drainage tube tract and the resulting sinus. When, however, the ventral hernia was operated on, eighteen months after the primary operation, there was no trace of a fibrous band or of any peritoneal adhesions beyond the omentum, which was very slightly adherent to the neck of the sac.

Incarceration of omentum or shreds from adhesions is not an uncommon accident even when the perforations of the tube are not of undue size. It may be avoided by occasionally lifting or rotating the tube after cleaning. When, however, the accident has occurred, it is necessary, in order to remove the tube, to cut off the incarcerated tissue with a long knife, or other instrument introduced through the tube.

Prolonged suppuration from the drainage tube tract results, in most cases, from the breaking down of tissue which had not been removed at the primary operation; from an infected ligature; from syphilis; and from tuberculosis. The abdominal drainage tube of itself does not cause the sinus any more than does a drainage tube in other parts of the body. The sinus is the result of some pathological condition at the bottom or sides of the drainage tube tract, and frequently occurs after laparotomy even when no tube had been used. If it is due to either of the first two causes—unremoved morbid tissue or an infected ligature—it will close of itself when all foreign matter has been removed. And it is fortunate for the patient that it remains open until such removal has taken place; since otherwise accumulation would occur within the abdomen. It is not an unusual thing to be obliged to reopen an abdomen in order to evacuate pus pockets formed around infected ligatures, or unremoved morbid tissue. A sinus caused by syphilis can of course only be closed by antisyphilitic treatment. Such a sinus existed in the second case of ventral hernia to which I have just referred.

When tuberculosis is the cause, the sinus generally will not close until all tubercular tissue has been removed. Two such cases have occurred in my experience: in one there was tubercular salpingitis, and tuberculosis of the lumbar lymphatic glands; in the other there was tubercular salpingitis with general tubercular peritonitis. In each case there still exists a ventral sinus.

A danger always to be feared from an unclosed sinus is the ultimate production of a fæcal fistula, and when a sinus persists, attempts should be made, even by a subsequent laparotomy, to remove the cause.

Fæcal fistula caused by pressure of the drainage tube on the intestine is by no means an imaginary danger; occurring most frequently when the tube rests on a diseased area of the bowel—such as may be left after the separation of peritoneal adhesions. This accident can be avoided by the frequent lifting of the tube after cleaning, or its replacement, after some hours, by a shorter and smaller tube.

There are certain cases where we always fear subsequent leakage of fæces. Where the outer intestinal coats have been torn in the separation of adhesions, or where a part of the bowel wall is in a doubtful, lowly vitalized condition, from adhesion to a suppurating tumor, or abscess cavity. And it is in these cases that the large glass drainage tube serves a most valuable purpose by providing for the free evacuation of fæces if any should escape from the intestine. This accident is not uncommon and is sometimes unavoidable, and often the fæcal discharge, though at first composed of all the contents of the intestine, will subside as the patient recovers until all passes by the natural way.

The last sequelæ of drainage to which I have allnded is ventral hernia. The drainage tube, by preventing perfect approximation of muscles and fascia, undoubtedly to a certain extent predisposes the patient to subsequent ventral hernia. The accident, however, is not a very common one, having occurred, in my own experience, in about 5 per cent. of the drainage cases. And it must not be forgotten, in this connection, that hernia also occurs when no tube has been used.

When heruia follows laparotomy it can always be cured, safely and easily, in a subsequent operation, by the thorough exposure of the recti muscles and the fascia, the complete removal of all cicatricial tissue, and suturing as in any case of primary laparotomy.

In conclusion, I will very briefly repeat the chief principles which I have attempted to impress in this paper:

1. The abdominal drainage tube, properly used, does not increase the mortality after laparotomy.

2. Confidence in this fact is necessary for a correct determination of cases requiring drainage.

3. Frequent careful cleaning of the tube is of the greatest importance.

4. The few annoying sequelæ attending the use of the drainage tube can be avoided or easily cured.

5. It is safest to use the drainage tube too often, rather than too rarely, as we would in case of doubt use any other precautionary measure.

RECOVERY FROM SYMPATHETIC OPHTHALMIA INDUCED BY A SARCOMA OF THE CHOROID.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY F. C. HOTZ, M.D.,
OF CHICAGO.

Mr. M., aged 56 years, a robust man of regular habits, noticed in August, 1887, a gradual failing of the sight of his right eye; and by the end of September the sight was entirely extinguished. Up to that time he had no pain or unpleasant feeling in or about his eye; but during October he had frequent paroxysms of violent pain in the blind eye and extending over the right side of the head.

October 29, after a very severe attack of this headache, Mr. M. called for a consultation, and the examination of the eye showed the following conditions:

"Slight œdema of the upper lid; fulness of conjunctival and episcleral veins; hazy and lusterless cornea; shallow anterior chamber; pupil immobile and dilated *ad maximum*; lens transparent, but vitreous absolutely impenetrable for light; T. +3: no perception. L. E. V. = $\frac{20}{20}$ with + 2 D.; normal fundus."

As the sight had been slowly and painlessly extinguished before any of those violent symptoms of glaucoma appeared, it seemed most likely the glaucomatous state was caused by an intraocular tumor. The removal of the eye, therefore, was urgently advised, but as usual, the patient was not prepared to accept this advice at once. However, after he had gone through a few more and exceedingly severe attacks of hemicrania, he became very anxious to be relieved of the source of his suffering; and November 5 the eye was enucleated; the instruments were disinfected with carbolic acid (5 per cent.); the eye and lid was washed with sublimate solution (1:5000); the wound was closed with aseptic silk and dusted over with iodoform.

Neither on the day of the operation nor on the two following days when I visited the patient at his house, anything unusual could be noticed in the external appearance of the left eye; nor was there any particular occasion for using the ophthalmoscope on those days, as the patient did not observe any disturbance of the sight, and described the feeling in his left eye as perfectly natural. As the healing progressed very satisfactorily the patient was instructed to call at the office in two or three days. He did not come until November 12 because the right eye was doing well; but since two days, he said, the left eye had been getting red, sensitive to light, and the sight seemed to grow a little dim. This was found to be true, V. being only $\frac{20}{30}$; slight pericorneal injection; clear cornea and anterior chamber; pupil of medium size; numerous posterior synechiæ which however were all easily broken by a few instillations of duboisine. When the pupil was fully dilated its field presented a very peculiar appearance under focal illumination. In the center there was a clear area exactly corresponding in size and form to the form of the pupil before duboisine had been used. The outline of this clear space was marked by a circle of very fine brownish dots (pigment from the synechiæ), and beyond this circle the anterior surface of the lens was covered with a film made up of innumerable thin and short fibres of a light brown color, irregularly curved and bent and promiscuously mixed together into a loosely woven network. Plainly visible though this film was by focal light, it offered surprisingly little obstruction to the ophthalmoscopic examination by which no disturbance in the vitreous and fundus could be detected. Under the use of duboisine the pupil was kept dilated and the pericorneal redness slowly disappeared; but otherwise no change occurred during the next ten days. In the night of November 24 a fire breaking out in the neighborhood, the patient stood for a long time at an open window to watch the fire and was thoroughly chilled. The eye became very red, painful and tender to the touch. All these symptoms, however, had subsided under warm fomentations and absolute rest in the dark room, when in the night of December 9, the patient accidentally gave his eye a severe blow with the finger.

In the morning (December 10) his sight was so poor that he could not recognize any one near him; conjunctiva of the lower lid red and swollen; copious secretion of mucus; much pericorneal injection; cornea streaked with interstitial opacities; lower part of iris swollen and dull, and the pupil not as fully dilated as before. Cocaine was used in addition to duboisine; and the eye improved so that December 17, the cornea was again clear and bright; V. good; and the fundus which could be seen very well with the ophthalmoscope, showed normal appearance. But this favorable condition did not last long; for on December 20 it was recorded "the pericorneal injection increasing; cornea streaky; dense exudate along lower border of pupil." And from that day the eye became worse every day; the cornea very cloudy; iris swollen, pupil

smaller, and eyeball tender to the touch; and finally the tension showed an appreciable increase. The eye seemed doomed; for an iridectomy under these circumstances promised no good; and without it the pupil would be closed by the inflammation, and the sight destroyed by the increased tension. What should be done to ward off the terrible fate—this was the question I anxiously sought to answer while sitting by the patient's bedside. I carefully scrutinized every symptom and the changes in the eye from day to day. Now duboisine had been used all this time, and when with the increase of the inflammation the pupil showed a tendency to contract the mydriatic was applied more frequently; but I quickly perceived that the oftener it was instilled the worse the eye seemed to do; and I soon persuaded myself the unfavorable course the eye had been taking, was probably caused by the mydriatic. Its use was, therefore, stopped at once and the artificial leech was applied to the temple; and in two days the most alarming symptoms had disappeared, and the pupil instead of getting smaller remained as large as it was originally before any mydriatic was used, and has retained this size to this day.

After the duboisine was discontinued the eye never showed so serious and alarming symptoms, although all through the months of January, February and March it showed frequent attacks of slight corneal and iridic inflammation, to counteract which I relied exclusively on leeches which were applied alternately to the temple and to the neighborhood of the inner canthus. So telling was the immediate effect upon the appearance of the eye that the patient's wife, who proved an excellent nurse as well as a good observer, noticed it at once, and several times when she saw the pericorneal injection return she applied leeches with the desired success without first waiting for my order. They were applied at least a dozen times and not in one single instance did they fail. Just to give an illustration of their prompt action, I will copy the memorandum for January:

January 6, 1888. Eye slightly redder, and watery; pain over eyebrows; but Tn. Leeches.

January 7. No pain; redness almost gone.

January 13. Pericorneal injection increasing since yesterday; cornea getting hazy and iris dull. Leeches to nose.

January 14. Injection very faint; cornea clearer; iris brighter.

January 19. Since yesterday eye red again; cornea duller. Leeches.

January 20. Less redness; cornea brighter.

January 22. Injection again increasing.

January 23. Eye still more irritated, getting quite tender. Leeches.

January 24. The eye quite comfortable; injection greatly dimished; cornea much brighter.

In February and March the free intervals grew longer and after the beginning of April the eye remained free from irritation. By April 14 the cornea had cleared up so that an ophthalmoscopic examination (the first since November) could be obtained; it showed a normal fundus. But the test of the sight brought another surprise, inasmuch as the eye which before had a H. $\frac{1}{30}$, now showed M. $\frac{1}{36}$; V.$=\frac{20}{40}$; and while then it required + 12 for reading, now + 18 was the best reading glass.

At the last examination, February 29, 1889, the same degree of M. $\frac{1}{36}$ V. $\frac{20}{40}$ was found. This remarkable change of refraction from H. to M. might have been brought about in two ways: either the whole lens might have been pushed forward, or the convexity of its anterior surface might have been increased. The latter presumption seems to me the more plausible explanation; for we can well imagine that the long continued inflammation of the pars ciliaris choroideæ had resulted in a permanent contraction of the ciliary fibres, by which the tension of the zonula was released and the lens allowed to become more convex. The appearance of the iris seemed to indicate that such changes had occurred: for its periphery was decidedly retracted so that the "filtration angle" was much larger than under normal circumstances, while the bulk of the iris stretched over the anterior surface of the lens like a tight-fitting glove, was so strongly convex that it formed a very sharp angle with the retracted periphery. The tension was normal; lens and vitreous were perfectly transparent and the fundus presented a normal appearance.

And here is another interesting point. If the tension of the vitreous chamber is controlled by constant flow of fluid from that cavity through the zonula into the aqueous chambers, how can we account for the fact that tension remained normal in this case, when the drainage was completely blocked by the iris being firmly glued to the anterior capsule of the lens? Is it possible that the filtration at the optic disc, which under ordinary circumstances seems to be very insignificant, may have become more active when the ordinary route was obstructed?

To complete the history of this case I have to give a brief report of the examination of the enucleated eye. It contained a large melanotic sarcoma springing from the nasal side of the fundus, and filling the larger portion of the vitreous chamber. Forward the growth had advanced to the ciliary ring; outward it was just on the point of breaking through the sclera, and backwards it reached to a line 6 mm. from the optic papilla. The nasal half of the choroid had entirely disappeared in the tumor; the temporal portion exhibited all signs of an intense plastic cyclo-choroiditis. The retina was completely detached and the vitreous, of course, gone. Under the micros-

cope the tumor showed the well-known structure of round-cell sarcoma with an abundance of pigment cells; in places these prevailed to such an extent as to form deep black spots. The papilla and optic nerve were not invaded by the sarcoma and showed no structural changes; the sheath of the nerve was swollen and its connective tissue contained numerous new cells; the intervaginal space was greatly distended and filled with fibrine and lymph cells.

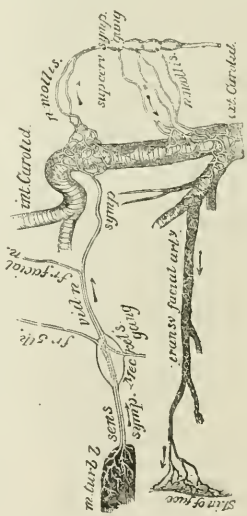
In conclusion I wish to say that although the sympathetic inflammation became manifest after the enucleation, it would be contrary to all our experience to assume a causative connection between this operation and the sympathetic affection. There is no case on record in which the symptoms of a sympathetic iritis were so fully developed, as in this case, five days after an injury or an operation. And I suppose if the eye had been examined between the second and fifth day the first indications of the inflammation would most likely have been noticed even at that time.

THE RELATIONS BETWEEN ACNE AND DISEASES OF THE NASAL CAVITY.

Read in the Section of Dermatology and Syphilography at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CARL SEILER, M.D.,
OF PHILADELPHIA.

I bring before you, gentlemen, a subject which should be of a great deal of interest to you all as dermatologists, and it is of particular interest to me as a rhinologist. It has been my fortune, or perhaps misfortune, during the last ten years to observe a large number of cases of acne among the better to do class of people whose ages ranged from fourteen to fifty years, and I have noticed that the acne has borne a certain relation to the condition of the nasal chambers, becoming worse with a head-cold, gradually disappearing as the nasal irritation has disappeared, finally becoming entirely well when the nasal disease was cured, and that too without any external application or internal treatment. I made this observation, as I have said, in a large number of cases, and about eighteen months ago I made mention of the fact in a communication to the county medical society of Philadelphia. The point I would like to raise here (as of course I cannot teach you anything about acne, about its varieties, the treatment, etc.) is that acne punctata is almost always associated with atrophic rhinitis, while acne rosacea is almost always associated with hypertrophic rhinitis. You know that the nerve supply of the nose is intimately connected with the vaso-motor system, coming as it does from Meckel's ganglion and being distributed to the skin of the face, neck, etc. Again, you also know that there is a large amount of erectile tissue in the nose though opinions differ as to its function. I hold that the erectile tissue has two functions. Its function in the penis is, of course, evident, but not so with that in the clitoris, vulva, or nose. Still, it must have a function, and I think it is that of a safety-valve or overflow, to relieve local congestion or venous turgescence in the surrounding parts. For instance, through emotional excitement the penis becomes erect. The mental influence acts upon the vaso-motor system, increases the blood supply in that part, and the erectile tissues of the penis receive the overflow. In the same way the capillaries of the nose, face, and neck are easily dilated, as is observed in the blush of shame or blush of any kind. If there were no overflow, or if the overflow were interfered with, a continued congestion would result, and it would, of course, centre mostly around the glandular tissue. The distribution of the nervous supply of these parts is very interesting, and I hope to picture it in a chart.



SCHEMATIC REPRESENTATION OF NERVES, ETC., INVOLVED IN THE PRODUCTION OF REFLEX SKIN RASHES ON THE FACE.

In this diagram *afferent sympathetic fibrille* (symp.) are seen leaving the middle turbinated process to join Meckel's ganglion, whence they accompany the *vid. n.* through a part of its course. On leaving it they shortly join the carotid process on the *int. carot. art.*, from which they issue to enter the *sup. cerv. symp. ganglion*. Here they end in *efferent sympathetic fibrille*, having a vaso-motor function, pass with the *nervus malus* to the branches of the ext. carotid. One such is traced by means of arrows to the congested area of skin on the face.

The argument in the context is that impressions following the *afferent* route to the ganglion are reflected along this *efferent* route as vessel-dilator waves to the area of integument exhibiting the condition of hyperæmia-erythema.

Acne usually appears about the time of puberty. At that time the involuntary erectile tissue is not yet fully developed. The influence of the nervous system is necessary for the development of the erectile tissue of the genital organs and elsewhere. In the meantime turgescence of the capillaries of the face takes place, the overflow is not taken up by the erectile tissue in the nose as this has not yet developed, and acne results. The appearance of acne in boys who practice masturbation, and its increase a day or so after the act is probably well-known to you all. I have observed it in a number of instances.

Another fact pointing to this etiological relation is the failure to relieve acne at this period as we have been led to hope by dietetic measures. I may say in conclusion that I have found little aid in my studies of this subject because of the very limited amount of current literature on acne.

Dr. Corlett asked Dr. Seiler whether he referred the acne to the nasal affection, or the nasal affection to the acne, the connection being a reflex one.

Dr. Seiler said his belief was that the acne was caused both by the reflex influence of nasal irritation and the mechanical congestion which was not relieved by the erectile tissue of the turbinated bones. In other words, the influence was both nervous and mechanical.

Dr. Corlett thought the paper was a very interesting one, and said that besides being able to trace some cases of acne to derangement of the digestive system, he had also seen it appear in persons predisposed to it during irritation in the genital tract, as in gonorrhœa, and in boys after masturbation. He recalled one or two instances in which boys had assured him their outbreak of acne was due to masturbation.

Dr. Brush inquired of Dr. Seiler whether he had not noticed a relationship between irritation of the genital apparatus and rhinitis.

Dr. Seiler thought it was an undoubted fact that one erectile tissue was influenced by an affection of another. Thus when there was expansion of the erectile tissue of the genital organs it invariably produced dilatation of erectile tissue of the nose, particularly when congestion in the nose already existed, thereby making the rhinitis worse. It was a neurotic element which started the circle; the mechanical interference manifested itself in turn. He then had a patient with atrophic rhinitis and acne punctata. By care and treatment he could clear the acne up completely, but it would return as soon as he lost sleep, drank, and began masturbating.

Dr. Bulkley had often had patients with acne who also had some nasal trouble, and he had tried to induce them to go and have the disease of the nose treated, but they had not followed his advice. There might be a great deal in what Dr. Seiler had so well said.

The thanks of the Section were extended to Dr. Seiler and his paper was requested for publication.

Foreign Practitioners in France.—One of the reasons assigned for the more careful examination of the qualifications for medical practice presented by foreigners in France, is the discovery of a diploma mill, located in Bennington, U. S., which is said to issue bogus diplomas at prices varying from $60 to $300.

THE REQUIREMENTS FOR PRELIMINARY EDUCATION IN THE MEDICAL COLLEGES OF THE UNITED STATES AND CANADA.

Abstract of the Report of the Committee, read at the Thirteenth Annual Meeting of the American Academy of Medicine, held at Chicago, Ill., Nov. 13 and 14, 1889.

BY J. E. EMERSON, M.D.,
OF DETROIT, MICH.

The report opened with the statement that it was the acknowledged inadequacy of preliminary education that furnished reason for a committee to report upon the subject.

Ideal preliminary educational equipment for the study of medicine had been sufficiently discussed by Drs. Gerrish and Connor at the meeting of the Academy in 1888. On their aspect of the question there was practical unanimity of opinion among the fellows of the Academy. All hoped for the day when every matriculant in an American medical college must have received the degree of Bachelor of Arts, Science or Philosophy.

It went on to say that the sources of information upon which it was based were primarily the annual official announcement of the medical schools, supplemented by the last annual report of the Illinois State Board of Health, and also carefully compared with the statistics compiled by Dr. W. G. Eggleston, of Chicago, and published in the Journal of the American Medical Association.

It pointed out discrepancies in the results obtained from these two sources, as possibly explained by lack of candor on the part of some of the deans or secretaries of the medical schools.

The origin of many medical schools being solely for the personal preferment of the originators and the enhancement of their professional reputation and practice, and their continued existence being dependent on the fees received from students, no appeal to higher motives can successfully antagonize the purely selfish and mercenary motive that dictated their origin and governs their policy. The only motive likely to prove successful was the enforcement of State laws similar to the Illinois State medical law, which would make their diplomas worthless unless they enforced more stringent preliminary educational tests.

The number of medical schools in the United States is 121, of which three give only a preliminary course and do not grant diplomas. Fourteen are homœopathic, ten are so-called eclectic, three are physio-medical, and ninety-four are so-called "regular" schools.

Of the ninety-four "regular" medical schools, twenty-three have no obligatory preliminary examination for matriculation; four require only evidence of "fair" or good English education; fifty-five require an examination in the branches of an English education, or accepts, as an equiv-

alent, a diploma of a high or normal school, or of an Academy, or a first grade teacher's certificate, or the certificate of a regularly organized county medical society. Three of these require deficiencies in Latin to be made up during the course; nine require an examination in English branches and Latin, or accepts the diplomas and certificates as mentioned above as an equivalent; one of these accepts as an equivalent for Latin a knowledge of German, French, or Scandinavian. Two require an examination in English branches and Latin, or accepts, as an equivalent, the diploma or matriculating certificate of a college, or of a school of arts, science or of mining. These are the Harvard Medical School and the College of Physicians and Surgeons of New York.

Of the fourteen homœopathic schools, one was shown to require an examination in English branches, or a certificate of graduation from some reputable school. Eleven require an examination in English branches, or the diploma of a high school, normal school or academy. Two require an examination in English branches and Latin; these are the medical department of Boston University and the homœopathic medical department of the University of Minnesota. The homœopathic department of this last university has the same requirements as the "regular" medical department.

Of the ten so-called eclectic schools, one requires a common school education; nine require an examination in the English branches or the diploma of a high or normal school or academy, or a teacher's certificate.

Of the so-called physio-medical schools, two require the usual examination in English branches or the diploma of a high school or academy, or a teacher's certificate. One was wholly disreputable, apparently.

Thus, of all the medical schools of the United States but thirteen require any preliminary knowledge of Latin, and twenty-three have no obligatory preliminary examination for matriculation.

The twelve medical schools of the Dominion of Canada not only require a much higher standard of preliminary education, but there is also a successful attempt to make the requirements practically uniform throughout the Dominion.

The medical matriculation examination of the McGill University Medical School may be given as an example of the medical matriculation of *all* the Dominion medical schools: 1. English language, including grammar and composition. 2. English history. 3. Modern geography. 4. Latin, including translation and grammar. 5. Mathematics, including arithmetic, algebra and geometry. 6. Elementary mechanics. 7. An option, either French, German, Italian or Greek, logic, botany, elementary chemistry. Degrees in arts received from any university in the provinces or Great Britain (*not* the United States) procure exemption from matriculating examinations.

Comparing the requirements of the Canadian with those of the American medical schools, one feels a humiliating sense of inferiority.

The practical question now arises, what can we as an organization do to hasten the dawn of a better era? No doubt evolution and the survival of the fittest will in the end bring order out of chaos; but we believe in the capacity of individuals to measurably direct and hasten this desirable process. We have a noble example set us in the person of the Secretary of the Illinois State Board of Health. It will not be enough to enact stringent medical laws in our various States, however much that is needed as a preliminary step; we must, in addition, have men to watch over and insist on the rigid enforcement of adequate laws with all the indefatigable zeal of which so rare an example has been afforded us.

MEDICAL PROGRESS.

A NEW METHOD OF MERCURIAL TREATMENT.—G. GAERTNER and S. EHRMANN, of the Medical Faculty of the University of Vienna, report their experience in the application of mercury by means of an electrical bath. For this purpose a bathing tub was constructed with two compartments, one above the other, separated by a diaphragm. The diaphragm adapts itself almost hermetically to the human body. The walls and floor of the tub are covered with electrodes (plates of copper or zinc) which are covered by perforated wood. The covering of one of the compartments is placed in contact with the positive pole; that of the other with the negative pole of the battery. Between the two compartments there is no other communication than that of the human body, the diaphragm being constructed of an insulating substance and the water of the two compartments only communicating by openings almost capillary in size, and hence the resistance here offered is so great compared with that of the human body that the amount of current which passes through the water may be disregarded. It may then be apparent that almost all the current, the intensity of which is measured by the galvanometer, passes through the body, and this indeed has been confirmed by exact measurement.

The advantages of this double bath are the following:

1. The strength of the current is equal in all parts of the skin immersed in the water.
2. Weak or strong currents may be used.
3. One is able to measure exactly the intensity of the current passed through the body.

The authors have lately made use of this bath as a means of introducing certain remedies, particularly sublimate, into the system. The arrangement is so convenient that first one half of

the body and then the other may be submitted to the action of the positive electrode. As an example of what has been accomplished in this manner the authors cite several cases, among them the following: A slender young man who had never been subjected to mercurial treatment was placed in the electric bath, the lower positive compartment of which contained 4 grm. of sublimate. The intensity of the current employed was 100 milliampères, the duration of the bath fifteen minutes. In the first twenty-four hours following the bath the urine contained considerable mercury; on the fourth day it amounted to 7 milligrams.

In all the experiments made the skin of the patients was absolutely intact, a fact easily ascertained, inasmuch as the least excoriation is manifested in the electric bath by a lively sensation of heat. It is beyond doubt that the mercury was introduced into the system by other means than by simple absorption. Furthermore, it is to be remarked that mercury appeared in the urine upon the day of the bath, proving that it quickly reached the vascular part of the integument. The advantages claimed for this method of treatment are:

1. The mercury is introduced through the skin as in the methods of injection and inunction, whereby accumulation in the digestive canal and liver is avoided.

2. Almost the entire cutaneous surface is subjected to the action of the mercury, and it is possible that it exerts a local action upon the germs contained in the skin.

3. The quantity of mercury introduced is proportionate to the intensity and duration of the current, thus permitting an exact measurement of the amount of the medicament absorbed.

4. The method is painless, cleanly and unattended by danger.

The authors have undertaken a series of therapeutical experiments including the application of iron by this method.—*L'Electrothérapie.*

Compression of the Thorax in Pleurisy.—Clinicians differ materially in opinion regarding the real cause of the pain of pleurisy. Friction of the inflamed surfaces of the pleura does not account for all cases, and some are of the opinion that it is explained by an involvement of the intercostal nerves. It is well known that patients seek to relieve themselves by changes of position, some finding ease by assuming a decubitus upon the affected side, while others prefer the dorsal position, and others, still, choose to lie upon the healthy side. R. Roth has experimented with the mechanical treatment of pleuritic pain, and has found that bandaging of the thorax is very agreeable to the patient. He employs a bandage of cotton 6–7 cm. wide, with which he envelops the thorax during expiration. In some cases it appears as though the bandage exerted a positive curative effect. In some cases, where the circular bandage is not well borne, relief may be obtained by covering the affected half of the thorax, during expiration, with broad strips of rubber adhesive plaster, which prevent too great distension of the thorax on that side.—*Corres.-Bl. für Schw. Aerzte.*

Rare Tumors of the Breast.—Dr. Dudley P. Allen, of Cleveland, reports a case of carcinoma in the breast of a man 50 years of age. The right side was first affected, but at present there is a line of nodules extending across to the opposite side. The left nipple is retracted. The right breast is the seat of a phagedenic ulcer of large size. The glands of the left axilla are enlarged. Tissue removed from the indurated border of the ulcerating surface presents, upon microscopical examination, the most typical appearance of carcinoma.

The second case was that of a chronic ulcer of the breast in a woman. The external appearances were those of carcinoma. An operation for the removal of the supposed cancer was begun, when an escape of pus revealed the true character of the cases.—*Medical News*, Sept. 14, 1889.

The Treatment of Uterine Fibroids by Electricity.—Dr. L. Danion, in a communication to the Congrès de Chirurgie, draws attention to the dangers attending the electrical treatment of uterine fibroids. He has collected four cases in which cysts were mistaken for fibroids, and death resulted from the treatment. He refers to other fatalities occurring in his own practice as well as in the practice of others, not excepting Apostoli, and quotes the opinions of English and American surgeons as to the danger of the treatment. The electrical treatment, in his opinion, however, has become dangerous only because it has included certain useless practices. His conclusions are as follows: The electrical treatment of fibroids should be in the hands of electro-therapeutists, for they alone are able to accomplish, with electricity, all the service which it is capable of rendering. An exact diagnosis is necessary; in case of doubt advice should be sought from an able surgeon. When the indication for the treatment has been established, the intra-uterine electro-caustic application should never be made, as it is useless and dangerous unless the object be a positive caustic action in the case of a well-determined lesion of the uterine mucosa, in which circumstance it is better to dilate when with patience the application of electricity alone will often be sufficient. Do not make punctures, for they are useless and dangerous. If the cervix is accessible, apply an electrode with a small surface and one that cauterizes laterally always at one and the same point. A current of from 50 to 80 milliampères is sufficient. If the cervix is

inaccessible, apply the method with the electrical tampon (a tampon covered with a sheet of caoutchouc except at its extremity). By this method a current of from 120 to 130 milliampères can readily be employed. Do not forget to reverse the current. If phenomena of excitation or congestion are witnessed, moderate the intensity of the current, especially that of the reversed current. Proceeding in this manner, one can readily obtain, without pain or accident, the best results that can be expected from electro-therapy, such, indeed, as will often surpass one's expectations.—*L'Electrothérapie.*

SACCHARIN IN COMMERCE.—The Public Sanitary Council of Hungary, by direction of the Government, has promulgated the following judgment respecting the use of saccharin: It is necessary and desirable that saccharin be excluded from commerce as a food or luxury, and for the following reasons:

1. Because it is not sugar, although by reason of its name and taste it may be made to pass with the public for sugar.

2. Because it possesses no nutritive properties, its physiological value as a food being *nil* in comparison with sugar.

3. Because its prolonged use leads to digestive disturbances.

4. Because its cheapness may lead to its substitution for sugar, as has occurred in other countries.

There is, however, no objection to its being prescribed as a medicine.

In Italy the manufacture and importation of saccharin has already been forbidden by ministerial decree, and its therapeutical application regulated by various limitations.

It is surprising that at the Paris exposition saccharin should have received the award of a gold medal.—*Corres.-Bl. für Schw. Aertze.*

EXALGINE.—In a discussion on exalgine in the Congrès International de Thérapeutique, M. BARDET reported on the results obtained in the Hôpital Cochin. From an examination of seventy-five observations he concluded that exalgine possesses remarkable analgesic powers, particularly in congestive and dental neuralgias and in congestive migraines with pain above and below the orbits. He found it important, however, to employ real exalgine; that is to say, the *methylacetanilide* which melts at 101°, because the isomers do not possess the same properties. Thus in England there is a product sold under the name of exalgine which is *aceto-orthotoluid*, a very different substance in a therapeutic sense, as it is inactive, while even in the dose of 0.40 centigr. exalgine produces marked effects.

M. Féréol said that he had not obtained results equally favorable with those reported by M. Bardet; he had often been obliged to discontinue the remedy without having relieved pain, and in some cases he had observed cyanosis from its use. He prescribed it in the amount of 0.50 centigr. per day.

M. Desnos said that if the previous speaker had not obtained desirable results from the use of exalgine it was because the dose employed was too small. He himself administered as much as 1.50 grm. in twenty-four hours and had secured relief in very severe cases of neuralgia; he had, however, also observed cyanosis from its use.

M. Dujardin-Beaumetz summarized the advantages and disadvantages in the use of the remedy. On the one hand, in many cases it removes pain and relieves obstinate neuralgias; on the other hand, when one is obliged to employ a large dose and continue the use of the remedy for some time, phenomena of vertigo make their appearance, and although these are unattended by danger, they require attention; furthermore, exalgine is insoluble. Exalgine in his opinion is a useful agent, but is inferior to antipyrin.—*Le Bul. Médical.*

GANGRENE OF THE INTESTINE FROM THROMBOSIS.—PINNER reports the case of a strong, healthy man, aged 50 years, who was suddenly seized with symptoms of an acute gastro-intestinal catarrh, accompanied with vomiting and purging. The diarrhœa ceased after a little, but the vomiting continued whenever food was taken. On the third day symptoms of collapse appeared, with subnormal temperature, tenesmus and a slight discharge of fluid blood. Death occurred on the fifth day. The autopsy revealed thrombosis of the inferior mesenteric artery where it is given off from the aorta; hæmorrhagic necrosis in the colon, especially in the cæcum, but to a moderate degree in the hepatic and splenic flexure; the sigmoid flexure and rectum free; moderate peritonitis.—*Centr. für Chirurgie.*

BILLROTH ON THE TECHNIQUE OF RESECTION OF THE INTESTINE.—At the last meeting of the Versammlung Deutscher Naturforscher ŭ Arzte, VON EISELSBERG remarked, in reference to resection of the cæcum, that Billroth, after several unfortunate results in his cases, had resorted to a new method of operating. He found, indeed, that when it became necessary to unite the lower end of the ileum with a transverse section of the ascending colon an angular union sometimes formed, as a result of which in two cases there was complete stenosis of the gut. Billroth, therefore, closes up the lower end of the colon entirely and, making a longitudinal incision higher up, joins the ileum at this point, and with the best results, for by this plan the natural relations are preserved, the ileum being at right angles to the colon.

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SATURDAY, FEBRUARY 22, 1890.

PRECISION IN DIAGNOSIS.

The power to correctly interpret the manifestations of disease is above every other a prerequisite to the successful practice of medicine. During the last fifty, and more especially during the last twenty-five years, the means of investigation have been so improved, and the advances in the study of pathology have been such, that former and even present methods of teaching must of necessity be greatly modified.

Never before were there such possibilities presented for the attainment of correct conclusions as to pathological conditions, and never as now were men able to make such critical studies, both of the causes and of the manifestations of disease. No longer may medical men simulate the blind giant who went beating about, and killing whatsoever he chanced to hit. The physician's better directed blow should fell the disease and not the man.

To the careful study of pathological conditions and to the correct interpretation of their manifestations, are we most indebted for the wonderful advances which have recently been made in medicine, and along these same lines lie the pathways of successful progress in the future, and no student may hope for permanent success in his profession, who does not bend his energies to the attainment of the best methods as they are being placed at his command of investigating diseases. Simple didactic instruction was well in its time, and it served its purpose, but its day is well-nigh past, and its methods must give place to others that are better. It is self-evident that the medical schools best equipped in the matter of chemical and physiological laboratories—those which offer the most approved facilities for microscopical investigations, and who mostly train their students at the bedsides of patients in the hospitals, are to be the successful schools of the future, and that those who fail in these respects will assuredly, as they should, go to the wall.

But our present purpose is not so much to indicate methods of teaching, or to urge upon students the necessity of thoroughly utilizing the best means of instruction, as it is to impress upon the minds of medical men already in the field the absolute necessity of making their individual cases matters of critical study, and of habitually training themselves to the attainment of utmost skill in medical and surgical diagnosis.

Medicine to-day is not so much in peril at the hands of any outward foes as it is from wounds inflicted in the house of its friends; and to attempt the practice of the healing art, without due preliminary preparation coupled with the most considerate study of cases to be treated, is not simply a misdemeanor, but a crime.

In these days of inconsiderate haste, the danger with medical men is imminent that they imbibe the same spirit and fail to exercise due diligence and patience in the study of their cases—that they shall fail of precision in diagnosis and, as a necessary result, grow reckless in their methods of prescribing.

The danger is that, by reason of failure to apply themselves diligently to the study of diseased conditions, and to the exercise of critical methods of examination and the attainment of definite conclusions, physicians shall begin to retrograde from the day of their graduation until they help to swell the vast throng which gives hindrance rather than help in the onward progress of the healing art.

We doubt if there be a single man that reads this article, who is fully satisfied with his own habits in these respects. We doubt if any of our practitioners have achieved their ideals of success in medical diagnosis, We are constantly working along the border line, uncertain of what may be discovered and of that which is unknowable.

Much that was deemed beyond our grasp is now within control. New facts are coming to the light which have important bearings upon the interpretation of diseases and upon the prac-

tice of the healing art, and there should be no students in our profession so diligent as those to be found among our graduated physicians. The literature of the day, replete with the experiences of other men, is at the one hand, and the sick and the suffering, with all their vital expressions of medical truths, are on the other, and only he who, walking in the midst of these, can thoroughly utilize their teachings for the good of men, has right to the path wherein he treads.

The paramount condition to successful medical practice must ever be that of precision in diagnosis. It is in some sense a gift, as are the powers of critical and correct discernment; but nevertheless it is largely a matter of education, and its rewards only come to those who are the patient, vigilant, tireless students of diseases in all their various manifestations. Let the diagnosis be clearly formulated before any prescription is made.

SANITARIA FOR THE CONSUMPTIVE POOR.

The curability of pulmonary tuberculosis is an established fact. Yet so small is the percentage of cases in which this fortunate result is attained that one may be excused for taking a pessimistic view of the disease in general, particularly when he contemplates the consumptive poor of our large cities. JACCOUD has set forth admirably the conditions favoring a successful management of this destroyer, and if one will study these he can not but be impressed with the utter hopelessness of their attainment by the poor. Climatic treatment plays such an important rôle that even consumptives whose means enable them to command every resource may be said to wage a hopeless fight if they remain in their city homes. What, then, awaits the patient who depends for existence on his daily labor, or that of brother or sister earning but a few dollars a week? Even when he can afford the attendance of a family physician his outlook is cheerless. The weapons which the skill of the pharmacist has placed at his command are costly. He can ill afford to procure the various forms of concentrated nourishment and the preparations calculated to aid his disordered digestion, and in most instances has to do without them. Then his circumstances deprive him of proper nursing, so that, as a rule, his fight is a losing one. Think, then, of that still more unfortunate consumptive who frequents the dispensary or outdoor department of some hospital. If taken in hand in the incipiency of his disease, and he be able to procure and assimilate sufficient nourishment, then, by the judicious use of tonics, hypophosphites, cod-liver oil, creosote, etc., there may be hope of arresting the mischief. If, on the contrary, he be far along, with a racking cough, hectic, night-sweats, anorexia and, perchance, diarrhœa, there can be but small chance of obtaining more than euthanasia. His home environment is generally against him, and the whole condition of his life such as counteracts the benefit of the most wisely directed treatment. Such a case is truly pathetic, and compels pity from even the stony-hearted.

It is for such sufferers who die by thousands in our great cities, that the plea is made for the sanitaria or hospitals devoted to the care of the consumptive poor. There are many, though perhaps not enough hospitals for the reception of surgical cases and cases of acute non-infectious disease, but there is a dearth of institutions of the kind herein meant where phthisical patients can be received and kept until death or recovery ensues. Four reasons suggest themselves for the speedy establishment of such infirmaries.

1. It is an eminently deserving charity that should appeal to the benevolence of the charitable.

2. Prolonged residence in such a resort affords for the consumptive poor the best, it might almost be said, the only chance of successfully combatting this disease. A phthisical patient should have every act of his life, every breath he draws or mouthful of food he eats, his exercise, his rest, in a word all his habits regulated by a skilled physician. And only in a well conducted institution can he be thus managed. Of the encouraging results that can be accomplished by such sanitaria witness those of Europe, notably Goebersdorf and Frankinstein in the inclement climate of Germany.

3. If there be anything in the theory of communicability of tuberculosis, then every consumptive who dwells in our crowded and unsanitary tenement houses is a source of contagion. And since it is out of the question to stamp out the disease by summary means, such measures for isolation and treatment as can be taken are incumbent on the State as a means of prophylaxis.

4. Although experimentation upon such pa-

tients would not be the aim of such an institution, still there would be afforded excellent opportunities for the trial of remedies and methods of treatment that promise well and if not successful are at least devoid of harm. In such ways humanity might be greatly benefitted.

Such are some of the considerations that commend these institutions to the humane and public-spirited.

Physicians wield great influence in the State, and they have better occasion than the laity to appreciate the evils of this widespread destroyer. Therefore it is to be hoped that their influence will be exerted in their respective communities for the establishment of such sanitaria.

EXAMINATIONS FOR APPOINTMENT IN THE UNITED STATES ARMY.

We publish elsewhere in the present number of THE JOURNAL a notice of the meeting of an Army Medical Board, which will be convened during the month of May next in the city of New York, for the examination of candidates for appointment in the medical corps of the United States army; and in order that those who purpose to make applications for such examinations may be fully advised with reference to the medical department and the requisites essential to appointment therein, we append a circular of information prepared by Surgeon-General Moore, which very fully conveys the needed information.

Of many things we, as Americans, have reason to be proud, but we cannot boast of large standing armies. The patriotism that burns in the breast of every true American is our best guaranty of protection to every American interest. At peace among ourselves and in accord with our environments, we have no need to lay upon ourselves those burdens of taxation which must be incident to the maintenance of vast military organizations. No emergencies can rise in the future greater than those which have arisen in the past; and the fact has been demonstrated, as we profoundly hope may never again be needful, that when a crisis shall demaud, armies fully equipped in every detail can be summoned at once to the field, and that their medical department can be as quickly developed to any needed extent; hence the present demand is limited.

The records of our medical officers in the past have commanded a world-wide respect, and such is their present repute that positions in the Medical Department were never more inviting than now.

The conditions essential to success are such that any applicant may esteem himself specially honored if he shall attain to an appointment in the medical corps, and we heartily commend this notice to the attention of aspiring young men.

EDITORIAL NOTES.

HOME.

MEDICAL DIRECTOR HUDSON, U. S. N.—The death of Medical Director Adrian Hudson, M.D., U. S. N., has been announced to the department at Washington as having occurred February 7th at Mare Island Hospital, California, at the age of 53 years. He was sick only five days, his attack beginning as influenza and eventuating in pneumonia of an intractable type.

THE AMERICAN PHYSIQUE.—Dr. J. B. Hamilton, of the Marine Hospital Service, is quoted by the Boston *Medical and Surgical Journal* as deprecating the slight attention paid in this country to a proper development of the physique. In an address before the Georgetown Medical College on "Ancient and Modern Physical Culture," he illustrated his subject by an estimate that not one-third of our population of the military age would be able to pass the physical examination of the recruit.

ACADEMY OF MEDICINE, NEW YORK.—Dr. Francis Delafield, recently elected to the chair of the Section on the Theory and Practice of Medicine in the Academy of Medicine, made his inaugural contribution in the form of a summary of his experience with pneumonia in epidemic influenza. He holds that four grades of pulmonary inflammation may be defined. There is a light grade, requiring almost no treatment, and a severe kind, which resists every treatment. Between these two others appear, generally having marked bronchitic symptoms, but differing in gravity by reason of the amount of consolidation which takes place in the graver of the two types, and by reason of the prolonged period of resolution in the solidified areas.

THE LATE PROFESSOR MILLER.—In the death of Dr. Edward Miller, of Louisville, a bright light

is early extinguished. Although only 48 years of age, he had attained to the position of Professor of Surgery in the Louisville Medical College, as well as to the editorship of the *Medical Herald*. He was the son of the late Dr. Henry Miller, President of the Association in 1859. The cause of his death has been ascribed to cardiac failure supervening upon an attack of epidemic influenza; the date of his demise was January 20th. *The American Practitioner*, writing in generous vein, says of Dr. Miller: "He was a man of uncommon talent and large learning, whose death vacates a place in the ranks of medical practice, education and journalism which it will be difficult to fill."

THE ILLUSTRIOUS DEAD.—At the recent Lincoln anniversary dinner held in Brooklyn, in answer to the sentiment, "Lincoln and his chosen State," Surgeon-General Hamilton paid a brief but eloquent tribute to the names and memories of Lincoln, Douglas and Logan, closing with these words: "Lincoln lies buried near the shores of the Sangamon; Douglass, by the limpid lake; Logan's dust will shortly be borne to its last resting-place near his favorite city, in soil made sacred by the memory of its illustrious dead; and for ages to come it may seem to the living that the sighing winds, passing from their resting-place on the lake to his on the beautiful river, are carrying tender messages of sympathy and love."

FOREIGN.

A LARGE FIELD FOR FEMALE PRACTITIONERS.—Two American lady-physicians have made a marked impression in China. One of them by her aptitude for surgery has astonished them: she resides at Shanghai, but the name is not given in the telegram which has come to us by way of London. Another lady, Dr. King, has won her way into high official circles and it is said she has even been consulted privately by the dowager-Empress, who has had pulmonary tuberculosis.

DR. THOMAS' BOOK IN CHINESE.—Another medical work by an American professor has been reproduced in the Chinese language, namely: Dr. Thomas, of New York, on Diseases of Women. There are five volumes in the Chinese translation. The general appearance of the work is satisfactory, but the illustrations are rather rudely done. This work will undoubtedly be a great help to those who are engaged in infusing the new education in the high official circles of that Empire. It may even be one of the means of hastening the downfall of the antiquated methods that have so long resisted the medical reforms coming from abroad.

PERILS OF FOOTBALL.—A recent number of the London *Lancet* had a list of seven casualties reported to it during the previous week from various parts of England. One of these was attended by a fatal result, and one of the correspondents remarked inquiringly if it would not be expedient to revive the enactment of the Scottish King James, who in 1524 decreed fifty shillings fine against any person who should be caught playing football.

PROF. E. LEYDEN.—Almost a quarter of a century has elapsed since Prof. E. Leyden was appointed director of the medical clinic in Königsberg. His pupils therefore have prepared to celebrate this event on the 6th of April, the intention being to present him with a memorial address and an album of photographs, as well as to erect a bust of the professor.

MEDICO-NAUTICAL SCHOOL.—The French minister of marine has introduced a plan for the establishment of a medico-nautical school in some city where there is already a State faculty. This school is to be connected with the schools in the ports of Brest. Rochefort, and Toulon. Since 1828 the marine sanitary corps has been reorganized eight times. Three cities are now contesting their claims to the honor of obtaining the school in question.

SPANISH GYNECOLOGICAL SOCIETY.—At the opening session of the Spanish Gynecological Society for 1889–90. Dr. E. Verdonces read a paper entitled "Some reflections tending to prove that the confidence inspired by our knowledge of anæsthesia and the employment of modern antiseptic methods does not justify or exonerate us in practicing the operations, often performed at the present day, of laparotomy, and especially so-called exploratory laparotomy."

THE LONDON MEDICAL RECORDER states that methyl-benzo-sulphinic acid has sweetening properties many times superior to saccharin. Like it, too, the new drug has disinfectant properties.

TOPICS OF THE WEEK.

THE BACTERIOLOGY OF INFLUENZA

We have now before us the original preliminary communication[1] by Dr. Maximilian Jolles, the reputed discoverer of the microbe of influenza, and well might we exclaim: "Parturiunt montes, nascitur ridiculus mus!" After all, the dust raised about the discovery of the microbe of influenza vanishes into air on perusing the statements made by the discoverer himself.

Dr. Maximilian Jolles is the co-proprietor of a private "chemico-microscopic laboratory," evidently devoted to the examination, chemical and microscopic, of sputa, urine, etc., sent for the purpose of diagnosis by medical men. The work on influenza was, therefore, not carried out in the Vienna Bactoriological Institute, and was not superintended by Professor Weichselbaum. In justice to Dr. Jolles, it ought to be stated, however, that he himself protests against being forced, by the untimely and exaggerated accounts given by the daily papers, to publish a preliminary abstract of his observations, these being as yet far from concluded, and therefore not allowing any definite conclusion to be drawn from them.

In examining sputa from patients who had previously suffered from influenza, he was repeatedly struck by the presence of numerous capsulated cocci, resembling Friedländer's so-called pneumonia bacillus, Although aware that other reliable observers had demonstrated the presence of this microbe in normal sputum and in various normal fluids, yet Dr. Jolles insists on the fact that in the specimens of sputa sent to him the bacillus of Friedländer was present in considerable numbers, though he also adds that other bacteria—bacilli, pus cocci, and streptococci—could be demonstrated.

By culture on gelatine Dr. Jolles isolated the capsulated microbes, and ascertained that, both as regards the manner in which they stain with different dyes and as to their cultural characters, they resemble Friedländer's microbe. He found the same capsulated cocci in the urine of a patient suffering from acute purulent cystitis, and also on one occasion on which Vienna drinking water was subjected to bacteriological examination he found in it also, besides various other species of bacteria, this particular species of capsulated coccus. Lastly, two rabbits were inoculated with the cultures; one of them showed no result, the other died on the fifth day from septicæmia.

These are all the facts observed by Dr. Jolles, and it must be clear that of the discovery of the microbe of influenza there is really very little evidence, if any. In the first place, the assumption made by Dr. Jolles that Friedländer's bacillus has a causal relation to pneumonia has been, as far as croupous pneumonia is concerned (and it is for this pneumonia that its etiological importance had been asserted by Friedländer and others), abundantly disproved, since this microbe is present in various conditions in no way related to pneumonia, for example normal sputum, the normal fluid of the mouth, etc.

[1] Wiener medizin. Blätter, No. 4, xiii.

In the second place, Dr. Jolles' argument that because in some cases of influenza one kind or another of pneumonia supervenes on the primary attack, one of the species of microbes present in the sputum of such pneumonia might be, and probably is, the microbe of influenza, is faulty in logic as well as in fact. We have already pointed out, in the last number of this journal, that the pneumonia following some cases of influenza is not of a uniform character, and is evidently a secondary complication; and, therefore, the microbe, even if proved to be the cause of this pneumonia, need not necessarily be the organism of the primary disease, that is, of the influenza. The demonstration of the microbe in a sufficient number of cases of influenza during the early stages of the disease must be the very first and preliminary step. This, however, has not been taken.

To all those interested in the discovery of the nature and causes of epidemic diseases—and none can and ought to be more so than the general public—the publication of incorrect, misleading and exaggerated accounts such as were telegraphed on the subject of the discovery of the microbe of influenza from Vienna, and appeared in Vienna, London and elsewhere, must always remain a regrettable incident.—*British Medical Journal*, Feb. 1.

MEDICAL PRACTITIONERS' MEALS.

Moderation and regularity probably form the concluding words of most of the elaborate directions so often expected by patients and given by their medical attendants. This is the theme which is repeated again and again, with slight variations; the quantity or the variety of alcohol may be indicated, the use of pickles and heating ingredients deprecated, and the kind of vegetable, cooked or fresh, may give a short respite to the monotony; but the theme is bound to assert itself afresh, and to come in with tremendous force at the close of the oration, so that the patient leaves, humming the refrain, "moderation and regularity," as though the words had never been heard before, and possessed a talismanic power which it had been left for the wisdom of the nineteenth century to disclose. But, joking apart, it may be worth inquiring how far the medical profession furnishes living examples of the truth of the doctrine. Upon general lines all are agreed, even though some may seek to widen the scope and intention of the words by adding significantly, "In fact, temperance in all things." When the question is pressed more closely, however, it will be found that the rush of work, the exacting demands of patients, and keen competition, do not allow many in general practice to follow out the second half of the lesson. It is more particularly the younger men who suffer from want of regularity, those who fear the consequences of delay when an urgent message has been received. From a health point of view it is sufficiently lamentable to find that they often have not time for their meals, but surely they are acting upon a mistaken notion of their duties to their patients. A tired brain, exhausted from want of food, is not best fitted to cope with the serious problems so often set before it. Surgeons understand the monetary value of moderation and regularity, so that their punctuality in all matters becomes proverbial; but the

family medical attendant sometimes seems to consider himself privileged to be a little late, on account of his numerous engagements. Is it too much to hint that, for his own sake as well as for his patients', one engagement, his dinner hour, should be kept with greater regularity? Many practitioners are at work for longer hours than railway signalmen, for whom so much proper sympathy is felt in the event of a catastrophe. If the public could realize that it is unreasonable to expect good advice from a tired and hungry medical man, fewer exacting messages would be sent, to the advantage of all concerned.—*The Lancet.*

RECENT SIGNATURES TO MEDICAL DECLARATIONS ON ALCOHOL.

Three leading declarations on the subject of intoxicants have been published, with the signatures of many leading members of the medical profession. The first of these was issued in 1839, and was to the effect that intoxicating liquors were unnecessary in health in any quantity, while excessive quantities were injurious. This was signed by, among others, Sir Benjamin Brodie, Sir James Clark and Dr. Marshall Hall. The second declaration appeared in 1847, and was mainly to the effect that perfect health was compatible with abstinence from all intoxicants, which might safely be discontinued at once or gradually, and that universal abstinence would conduce to the health, prosperity, morality and happiness of the human race. Sir John Forbes, Sir Risdon Bennett, Sir J. McGregor, Sir B. Brodie, and 2,000 other well known physicians and surgeons appended their names. The third declaration appeared in 1871, Mr. Ernest Hart and Dr. Parkes having initiated it. It was designed to call attention to the inconsiderate prescription of large quantities of alcoholic drinks in disease as a grave danger, and to suggest a careful prescription, as in the case of a powerful drug, for the occasion only. This was largely and influentially signed by consulting and hospital physicians and surgeons. Within the last year and a half the British Medical Temperance Association has secured 622 additional signatures. Of this number no fewer than 561 have been affixed to all three manifestoes. Among the names appended to the last document are those of Prof. McKendrick and Sir George Macleod, of Glasgow, Prof. Simpson, of Edinburgh, Sir Henry Pitman and Dr. W. S. Playfair. Among the signatories to one or other of the declarations have also been Dr. Bristowe, Dr. Matthews Duncan, Sir George Paget and Dr. Bridges (of the Local Government Board). Such a body of testimony from the medical profession is the best answer to the aspersion so frequently indulged in by irresponsible agitators that medical men are generally opposed to the temperance reformation. This great and growing movement has no truer friends than the many within the ranks of the medical profession.—*British Med. Journal.*

THE EPIDEMIC OF INFLUENZA.

Those who have followed the character and spread of the present epidemic on the Continent and in this country must no doubt have come to the conclusion that, like other epidemic diseases, influenza is spread by contagium, and must be due to a living organism, a microbe. The discovery of this has been announced from Vienna. Some of the daily papers, on Wednesday of this week, brought the news that the microbe of influenza has been identified by Drs. Maximilian and Jolles, working in the Vienna Bacteriological Laboratory under Professor Weichselbaum. It is stated briefly that this microbe is similar to, but not identical with, the microbe of croupous pneumonia. Many of the readers of the *Journal* are aware that Weichselbaum had, independently of Fränkel, of Berlin, shown that genuine croupous or fibrinous pneumonia is due, not to the bacillus of Friedländer, but to a capsulated diplococcus—the diplococcus pneumoniæ—having special morphological and cultural characters. The discovery of the influenza microbe, coming from such a distinguished and reliable source, deserves in itself careful attention, and this is enhanced by the fact that in the influenza of the present epidemic both on the Continent and in this country, some kind of pulmonary distemper is one of the conspicuous symptoms; and this, though generally mild and of the character of a slight bronchial catarrh, has yet proved fatal in a certain percentage of cases terminating as severe pneumonia. On the other hand, it is necessary to bear in mind that in these fatal cases the pneumonia is not of the same nature in all cases; the *post-mortem* examination shows it to be in some instances of the character of severe catarrhal or broncho-pneumonia, while in others it is more of the nature of fibrinous pneumonia. Further, it is to be remembered that, except in these fatal cases, the disease itself in its course and symptoms has no more similarity to croupous pneumonia than to typhoid fever, and that the pneumonia, when present, is always of the nature of a secondary complication, supervening on previous pulmonary weakness (age, previous disease, or a chill caught during convalescence from the primary influenza). It is, however, premature to make any further remarks about the matter until all the details concerning the microbe and the evidence as to its claims to be regarded as the microbe of influenza are made known.—*Brit. Med. Jour.*

ABDOMINAL SECTION.

The *Weekly Medical Review*, December 28, 1889, publishes a paper which was read by Dr. L. S. McMurtry, of Danville, Ky., at the meeting of the Southern Surgical and Gynecological Society November 13, 1889, at Nashville, with a tabulated report of cases. In connection with many valuable and practical suggestions, he closes the article with the following words:

Increasing experience has impressed me more and more with the difficulties of abdominal work, and makes me less confident of often meeting with simple cases. In conclusion I desire to make an earnest plea for earlier interference in abdominal diseases. What Bantock has done in England by his little work entitled "A Plea for Early Ovariotomy," we need to do in our own country. When operations are done in good time, before emaciation and exhaustion come on, and before repeated attacks of peritonitis have complicated comparatively easy tasks for the surgeon, then will our results excel even the brilliant record of the present time.

PRACTICAL NOTES.

THE USE OF ANÆSTHETICS IN NATURAL LABOR.

Obstetric anæsthesia is quite different from surgical anæsthesia, the latter being indicated for all obstetrical operations. Obstetric anæsthesia may be general or local. For the former are used ether, chloroform, chloral, and a variety of mixtures, including the bromide of ethyl and the protoxide of nitrogen. Chloral can hardly be considered as a general anæsthetic in the same sense as ether and chloroform. An injection of three or four grammes of chloral in solution given during the period of dilatation, and repeated perhaps in four or five hours, will often prove of the greatest benefit and comfort to the patient, regulating the pains, moderating the suffering of the patient, and abbreviating the duration of labor. In the latter part of labor chloral is less useful than chloroform, this substance being now almost universally used in parturition. When it is employed only in the first stage of anæsthesia no particular influence is exerted upon the contractions. If it is pushed to the second stage the contractions are retarded, but soon resume their normal rhythm. In the third stage of chloroform anæsthesia the contractions are diminished, or may cease altogether. This is a stage of danger, for not only the uterus but the heart and other muscular organs may be paralyzed. The fœtus experiences very little of the effect of the chloroform. The author's experience is summed up in the following propositions:

1. Chlororm given in small doses produces a condition of physical and moral calm in the patient.

2. If the inhalations are prolonged for a considerable time, the result will usually be an attenuation of the uterine pain. The perceptions of the patient become less keen and the uterine contractions are slower.

3. If the period of complete anæsthesia is reached with analgesia there is surgical and not obstetrical anæsthesia.

4. In some cases chloroform excites instead of calming, and in such cases its use should be discontinued.

5. In some cases chloroform has unquestionably diminished the retractability of the uterus, and has thus been the cause of more or less severe hæmorrhage after labor.

6. Chloroform has no action upon the fœtus.

7. Chloroform given during the period of expulsion has a less decided effect upon the contractions of the abdominal muscles and the resistance of the perineum than is generally supposed. The sensation of pain at that period is not entirely abolished, the contractions are frequent, and Charpentier has failed to notice that which has been called by Campbell dissociation of the sensations of touch and pain.

Chloroform is especially indicated—

1. In primiparæ who are nervous and excitable, and in whom the pain may even cause delirium; also in those with whom the labor is greatly prolonged, thus becoming a source of danger.

2. In all cases in which there is a spasm, contraction, or rigidity of the back of the neck or body of the uterus. Contra-indications are the absence of severe suffering, the existence of placenta prævia, general prostration, disease of the circulatory or respiratory organs, cerebral disease, alcoholism, etc.

During the period of dilatation chloroform is most required, but only to the extent of obstetric anæsthesia, as a rule. It sometimes gives rise to nausea, vomiting, headache, and various nervous troubles. Hæmorrhage is not likely to result unless the anæsthesia is profound. Chloroform can not cause convulsions; on the contrary, it is one of the best means for relieving them. It may also be useful in warding off puerperal mania from those patients in whom the intense pain of parturition might lead to such a result. Dntertre has found reports of forty cases of sudden death during labor attributable to chloroform, but of that number thirteen should be eliminated as irrelevant. Of the others, some had cardiac or pulmonary disease, some suffered from alcoholism, and in the others narcosis was too profound. A first condition in the use of chloroform is that it be chemically pure; death from respiratory syncope may follow the use of an impure article: Small quantities should be given, the patient being in the horizontal position, and there should be an interval between successive inhalations.

Subcutaneous injections of antipyrine, twenty-five centigrammes at a dose, have been used in a number of cases to produce obstetric anæsthesia. Chiari and Guéniot report good results from its use. Various mixtures have been suggested, in most of which ether, chloroform, or chloral is an element. Doléris has advised the local use of a five-per-cent. solution of cocaine muriate to mitigate the pain of labor, but the author expresses his views upon the subject as follows.

1. Nothing can be applied to relieve the pain caused by the distension of the lower segment of the uterus which causes the pain felt during the contractions.

2. Applications of cocaine may give relief if they reach the nerve endings of the supravaginal and infravaginal portions of the cervix and the nerves of the vagina. Thus the pain of dilatation may be modified.

3. For the pain produced by compression of the nerve trunks of the pelvis no local application will avail.

4. The pain in the vulva and vaginal mucous membrane during expulsion may be somewhat modified by local applications.

As to the value of hypnotism in parturition it must have a limited range. Of thirteen cases in which it was tried, it was successful in only four, the patients all being of a hysterical temperament.—Charpentier, *Bull. et mém. de la soc. obst. de Paris*, 1889, No. 5.—*N. Y. Med. Jour.*

SOCIETY PROCEEDINGS.

Pittsburgh Obstetrical Society.

Regular Meeting, November 7, 1889.

R. STANSBURY SUTTON, M.D., PRESIDENT, IN THE CHAIR.

DR. J. J. GREEN, of Pittsburgh, presented the following paper:

FACE PRESENTATIONS.

We understand by a face presentation that the chin is extended, that the occiput is reflected against the neck, and the face with the frontal portion of the skull occupies, or has a great tendency to occupy the pelvic entrance. This condition does not occur frequently. Statistics show that among French obstetricians, about one in 250 presents a face. Dr. Churchill, some years ago, found that in British practice, face presentations occurred once in 292 cases.

According to German statistics, it occurs once in 130 cases. If it could be proven that the difference in number really occurs, we might conclude that some difference in the anatomical formation of the pelvis exists, or that the fœtal head among Germans is somewhat less, or may more frequently possess a long occiput.

Face presentations seem to solicit only a cursory mention by many of our writers on obstetrics. We regard the subject of much more importance than seems to be attached to it by many writers. When we review the causes leading to face presentations, and difference of opinion with reference to management of same, it will be noticed that some good authorities recommend one method of procedure, while equally as good advocate manipulation almost directly opposite. One directs version, another non-interference. Doctrines of this character tend largely to confuse the general practitioners — the men who really occupy the front rank among obstetricians, for it is they who wait on the legitimate mothers of families.

Edward L. Partridge asserts that there is no great disparity in the views of obstetricians upon the cause of face presentations. This may be true in a measure; yet it is equally true that scarcely any one writer coincides in a majority of particulars with anyone else.

There seems little dispute about the classes or varieties of face presentations. Anterior, transverse, and the posterior varieties, we think may with propriety include all shades of position as well here as in any other presentation; for a very small difference in the pelvic slopes will sometimes cause a vast modification of a vertex presentation. Any ordinary obstetrician can, after a few hours of impatient waiting, discover some kind of a misfit between the outline of the fœtal head and the beautifully described pelvic planes as set forth by Meigs and Bedford.

Obliquity of the uterus, according to most authors, is believed to be the cause of a very large majority of face presentations, from the fact that in nearly all cases, immediately after the diagnosis of face presentation is confirmed, obliquity of the womb is found to be present. Yet, frequently obliquity of the uterus is *well* marked, and the face does not present. We find recorded a number of face presentations observed during post-mortem examinations, which we think prove very little, the diagnosis not having been made out previous to the death of the mother. If the mother died before the fœtus made its last effort to move, the absence of contractile power of the uterus would permit the child to assume almost any position, and remain there indefinitely. Again, the fœtus might gravitate, regardless of any and all surrounding circumstances, either with tendencies to bring about face presentation or any other head position. It seems reasonable to grant that in case of dead fœtus with head presenting the chin would drop away from the chest. We find all manner of presentations when the child is dead *in utero*, previous to setting in of labor pains. It is in such cases that a large quantity of liquor amnii is usually present, and the membranes usually protrude unobstructed, containing an excess of fluid. The membranes being ruptured, a large quantity of fluid suddenly escapes, thus accounting for a portion of the excess in number of face presentations, when the fœtus dies some time before the beginning of labor. Another cause of face presentations: In dead children there is lack of resistance on the part of the spinal column, when the uterus is conducting the early stage of labor and the fundus pressure cannot be properly centred. In other words, the axis of the fœtus cannot be sustained; the mechanism of labor becomes unnatural, and the result doubtful. We might state that we believe any cause that may lead to the separation of the chin from the chest will lead to a face or brow presentation. This cause may exist in the fœtus itself or in the anatomical formation of the mother's pelvis. The bony or soft parts may be at fault. Ahlfeld ascribes one case to enlargement of the thyroid gland. Increased size of the chest; some unusual looping of the umbilical cord; either too small or too great a quantity of amniotic fluid may give rise to face presentation. The

causes may be physiological, pathological, anatomical, and we might safely and truthfully state traumatic or surgical, for not long since I heard a physician say that he believed he converted a crown to a face presentation. Hecker places great stress upon the shape of the child's head. Judging from the appearance of most of the babies that have faced me as an obstetrician, I would be perfectly willing to grant Hecker the full credit of his claim. Some of them were days in getting into human shape. The diagnosis may be very easy for some, but with others the task is a troublesome one. My first case was properly made out after some time. I have always congratulated myself on the case, believing that it was some unusual form of face presentation that never occurred before, and I am very certain I have not made a similar diagnosis since.

By the touch only can the diagnosis be made, and then the membranes must not be thick or largely distended. You must see that everything connected with the case is favorable for an early diagnosis, for in the majority of cases the head remains high and the membranes low, and usually the frontal bone can most easily be touched, and it moves about with such a degree of facility that the obstetrician frequently finds it expedient to remain silent in the presence of the lady in labor and her near relatives. The outline of the face, according to most authorities and all the obstetricians, is the only reliable sign. These, however, are easily determined as soon as the head descends low enough.

The mechanism of labor in face presentations is similar in nearly all respects to that of head in any other position. When the chin presents in either of the lateral positions, descent and rotation, though somewhat delayed, always takes place without interference. It is when rotation of the chin does not take place that the skill of the obstetrician is taxed. That labors have terminated successfully without the rotation of the chin we cannot doubt, when such men as Partridge, Taylor, Tarriere and others report them. But in nearly all cases the results are disastrous.

I have succeeded in rotating the head three times, I think, in all; once in converting a face to a vertex. After repeated efforts the patient was directed to take the knee-chest position. I had not read of placing the patient in this position with a view of converting a face to a vertex, nor can I speak of it in the hands of others, but I accomplished the end without much difficulty by placing my left hand under the abdomen of my patient and introducing the right hand well into the vagina, and by upward pressure I was, with very gentle pressure against the head with index and middle fingers of right hand, enabled to force back the chin and face. I then placed the woman on her left side and in a few minutes the vertex presented. I then ruptured the membranes. The case terminated successfully in a short time.

Dr. Kearns: I never saw but one case of face presentation; it is rarely encountered. I have had cases which were face presentations, but not worthy of mention, inasmuch as they were premature fœtuses and not attended with any difficulty whatever. The one case I had, thirty years ago, I will never forget. I had had but little experience prior to that time. The labor was protracted and very severe; delivery was spontaneous. When I recognized the presentation it was far advanced. I cannot recollect whether the child was dead or living; my memory is at fault; but I know the patient recovered, although it required a vast amount of patience on the part of the attendants, the case being protracted. I am sorry the doctor did not go more fully into the treatment of these cases. His classification of three forms is perhaps practically correct—posterior, right and left. As to the cause of this malpresentation, might it not be automatic? Might not the motions of the child produce it? Might not the fœtus take a somersault and turn around and never be restored? With regard to treatment of cases, their delivery should be left to nature, I think.

Dr. Blume: I was much pleased with Dr. Green's paper. As he says, face presentation has often been the subject of discussion among obstetricians, and yet there is still a diversity of opinion as to its etiology and treatment. The doctor gave some causes which may produce this presentation. Wiucle states that there are thirty-three theories on the etiology of this presentation. I do not intend to dwell on these; I wish to make a few remarks on the treatment. Since Boer, in 1791, first clearly described the mechanism of face presentation, and showed that the chin always rotates to the front, no matter in what diameter the face presents at the pelvic inlet, an expectant treatment has more generally been recommended. To-day it is the opinion of leading authorities that an expectant management should be considered as a fundamental rule in all those cases in which no contra-indication exists at the commencement of labor, and no complication develops during the process of labor.

Such a contra-indication is a contracted pelvis. Its importance in the etiology of face presentation is well known, for we meet with it in about one-third of all cases. Another important contra-indication is placenta prævia. The third factor, which often may require interference, is feebleness of the uterine action, which may develop during the progress of labor; and, finally, anomalies of the mechanism will also require assistance, among them mento-posterior positions in which anterior rotation does not occur, Let us consider now a case with a contracted pelvis, where the true conjugate is somewhat less than four inches.

It is the opinion of most authorities that the delivery should not be left to the powers of nature. The best method to deliver the child and protect the mother in such cases is version. If this fails, it may be possible to change the extension of the head and produce flexion. If this is a failure and the chin does not rotate to the front, it might be permissible for a skilled man to apply forceps and try to perform rotation, but very carefully. The blades may be applied like Scanzoni recommends, and may be taken off and re-applied if necessary. If this also should fail and the condition of the mother demand prompt delivery, craniotomy remains as the only safe procedure.

Now, in cases of normal face presentation, where the head and the pelvis are normal, in such cases rotation usually will take place and no interference is necessary as long as the mother and child are in good, healthy condition. If rotation should not occur, we have several ways to imitate and assist nature. In cases of mento-posterior presentation, for instance, rotation may not take place, because, as Penrose recently described, the chin cannot descend far enough to meet with a sufficient resistance, and this is certainly true. He recommends a simple procedure, which deserves our attention. He applied in such a delayed case a blade of the forceps on the posterior cheek, so that it found resistance, and the chin swept around instantly. Another method is the application of the forceps and trying to bring the chin to the front in the manner described by Scanzoni, but, as Penrose terms it, coax it rather than compel it to rotate. A better method than this latter attempt to produce rotation is to produce flexion and make out of a face presentation a normal vertex presentation. This can be done in three different ways. The old way, followed hundreds of years, is described by Dr. Green. The hand is introduced, the head is lifted upward and the chin brought to the breast. If this fails, an attempt can be made to pull the occiput down, while the other hand presses firmly upon the head, through the abdominal walls. A better but more difficult method is described and recommended by Schatz. He changes the unnatural lordotic attitude of face presentations into the normal kyphotic attitude of vertex presentations by external manipulations.

This method requires great dexterity, is permissible only during the first stage of labor, and often impossible when the abdominal walls are very thick, so that it is difficult to make out the shoulders so that you have a hold on them. Schatz first showed that face presentation is not only a faulty position of the head, but a faulty position of the whole body.

The last method was described three years ago by Thorn, formerly assistant of Olshausen. The hand is introduced inside the vagina, the head lifted upward, the chin, the forehead and the occiput moved towards the breast. The external hand assists by pressing first the occiput downward, then the breast—as you see here on the board—from left to right, and finally the breech from right to left, so that a completely normal vertex presentation is produced.

This method is said not to be difficult; it can be performed even after the waters are drained off. If these methods fail, podalic version is indicated, and should this prove impossible, the obstetrician having been called too late, nothing is left but craniotomy; it is the only safe way to deliver, and in such case a conservative operation. It is not allowable under any condition to attempt to deliver with forceps when the chin is directed to the sacrum.

DR. DUFF: I would like to put myself on record. I don't believe in this conservative work in face presentation, as placed before us to-night. I think it the duty of the obstetrician to make his diagnosis early, and, having made the diagnosis, rectify it by one of the methods suggested by Dr. Blume. You have not any right to sacrifice both mother and child by a faint hope that the head is going to pass through under these circumstances where you have the opportunity of making a diagnosis early in the case. And, furthermore, I was sorry that Dr. Green did not go more extensively into consideration of the delivery of face presentation with chin posterior. The cases reported in our journals I do not believe. I believe it is an absolute impossibility for a child weighing 13½ pounds to pass through a pelvis, even if that pelvis is 6½ inches.

DR. BLUME: Dr. Green stated in his paper that external examination in face presentation fails, if I understood him right. I must say that abdominal examination is often the only way to make out an exact presentation. The head is high up if you have a contracted pelvis, and it is sometimes impossible to diagnosticate exactly by the vagina those conditions which may be readily made out by abdominal palpation and auscultation.

DR. GREEN: I agree with Dr. Kearns in his remarks to a great extent. I think myself, and I believe the general impression is, where the pelvis is not contracted that all cases would terminate successfully without any surgical interference. It may have been my misfortune to meet with a few more face presentations than some others, yet I have not seen nearly so many as some physicians who attend a much less number of cases of confinement than I do. I have never seen a delivery where rotation of the head did not occur, though I have no reason to disbelieve such men as have testified differently. I think certainly they know what they saw. I have only one remark to make in regard to what Dr. Blume has said as to deformed pelves. So far as I have looked up the matter I think his report of causes is true. A de-

formity of the pelvis, whilst it may produce a face presentation, is no more likely to produce a face presentation than any other position of the head, and whilst it may produce a larger number of cases than some of the other causes assigned, I would state that so far as I have read the matter up, the authors do not so state it. One further remark I wish to make in regard to the causes spoken of by Dr. Kearns, that is the motion of the child itself. Now that is given by some author, I cannot tell you by whom. Dr. Blume speaks of 33 theories (Winckel). There are more than that number. As regards version. In the cases that I saw, and as far as I have looked the matter up, version after the rupture of the membrane by external means, is not possible; it has failed entirely in the hands of the finest obstetricians. Besides, version of the child is one of the most hazardous operations to the mother. More women die after version than after any other surgical procedure unless it be after craniotomy. They can be lacerated to a great extent by the use of instruments, or by manipulation in trying to place the head in position. During anæsthesia they will endure instruments for hours, and they will endure the powerful manipulations of three or four men working for hours, and will recover, yet after version the mortality is greater.

DR. DUFF: Do you think that statistics stating the number of deaths from version during the past fifteen years would be reliable to-day? One of the great causes of mortality from version in the old statistics is the fact that we did not use antiseptics.

DR. GREEN: I am glad you spoke of that. In looking this matter up I found one writer who stated that with all the present antiseptic facilities the mortality was greater.

DR. BLUME: I only want to defend version. The obstetrician more and more recognizes the value of version in some cases, but these cases must be suitable ones; you must not have a half-dead woman to practice on.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Anæmic Œdema—Osteitis of the Ribs—Gastrostomy—Ulcerations of the Uterine Neck—Congress of Dermatology and Syphilography.

Dr. Robin read a note at a recent meeting of the Academy of Medicine, in the name of Dr. Renaud, of Lyons, in which the author describes a frequent lesion, but undescribed till now—that is, anæmic œdema. He studied the conjunctival structure of the renal tissue, which he supports on clinical and anatomo-pathological observations. The article is headed, "On the false impermeability of certain Brightic kidneys, and the therapeutics of comatose uræmia." The author explains that in nephritis in general, the number of glomerules affected is infinitely less than is supposed, and it is not in the diminution of these glomerules that one must seek the annulling of the renal functions. There frequently exists in Brightic kidneys a lesion which is known under the name of anæmic œdema. The papules of urticaria are a type of this condition. It results from an acute congestive œdema, operating in an inextensible tissue, the dermis. When the liquid of the œdema has acquired a sufficient tension to counterbalance that of the blood in the vessels, it flattens them and renders them exsanguineous, whence the pale aspect well known of the centre of the nettle-rash papule. Things do not pass otherwise in the parenchyma of the kidneys, in case of congestive, sudden and intense œdema. It results that, in the cases of chronic nephritis, the preventive treatment of uræmia should consist in a lacto-vegetable alimentation, alternated with eggs and meat which, like that of pork, do not sensibly leave toxic residues. But the principal indication is the systematic discongestioning of the kidney, not only by the application twice daily of dry cupping to the triangle of Y. L. Petit, but also by the moderate applications of leeches, each time that the coefficient of exudation is seen to be lowered. The treatment of the attack of comatose uræmia may therefore be thus summed up: One must, above all, have in view the direct discongestioning of the kidney, momentarily annulled by the uræmia. This may be effected by general bleeding, then by local bleeding, by the reiterated application of leeches, six to be placed on each side, then three only each day, until the anuria ceases. These appear preferable to scarifications. The second indication is to raise the intravascular tension, by means of drinks, by the ingestion of milk or of pure water. As the ingestion of liquids cannot be pushed to any extent, this indication may still be fulfilled by the aid of enemata of pure water; 250 grams injected each time into the rectum, every two or three hours, preceded by a purgative enema. The arterial pressure is thus not only raised, but by this means the washing of the tissues is effected, and the materials more or less toxic which are accumulated in them render them soluble. Finally, recourse is had to the frequent inhalations and almost continued of oxygen gas, which is applied to the mouth and to the nostrils, by means of a large glass funnel. One thus acts on the nervous system and on the interstitial combustions, which are raised, and which enter for a great part, in the destruction of the toxic matters retained in the interior. This treatment has not in view the cases of eclamptic uræmia of chronic degenerative nephritis, called parenchymatous. What the

mechanism of the production of the uræmia in this case is, is a question which has not yet been elucidated.

Dr. Chauvel had occasion twice during the year 1889 to observe a complication of abscess of the liver, in the form of caries or osteitis of the ribs in the neighborhood of an opening of a purulent collection externally. From these two observations, which Dr. Chauvel read before the Academy of Medicine, he deduces the following conclusions: 1. Caries or chronic osteitis of one or more ribs, may present itself as a distant complication of abscess of the liver opened externally, whether spontaneously or artificially. 2. The osseous alteration, which may extend to a considerable length of the ribs and of their cartilages, is the result of inflammation produced by the contact of irritating pus. It becomes the cause of the transformation of the wound into a fistulous tract persisting indefinitely. 3. The indication is clearly to excise the fistulous tract, to remove the osseous and cartilaginous parts which are altered, to scrape the parietes of the suppurating cavity and to allow the loss of substance to be filled up by granulations from the bottom to the surface. 4. It may be necessary to resect a healthy rib to enable the surgeon to open largely the morbid focus and to excise the diseased bones. This resection, which alone permits the cure, adds nothing to the gravity, generally very slight, of surgical intervention.

At the same meeting of the Academy Dr. Terrillon recalled the circumstance of his having presented, eight months ago, a man on whom he had performed the operation of gastrostomy for an impermeable narrowing of the œsaphagus. This man fed himself by the fistula of the stomach, but the gastric juice, which was very acid, constantly ulcerated the opening and caused intense pain. Attempts having been made to re-establish the permeability of the œsaphagus, the surgeon succeeded, in the month of July last, in obtaining a sufficient dilatation to enable the patient to feed himself normally. Dr. Terrillon then resolved to close the fistula. In order to affect this the edges were vivified to the neighborhood of the mucous membrane, then the union was effected by the aid of two rows of suture. There remained of this operation a small fistula which in its turn was obliterated. The man now eats and lives like other people, but he is still obliged to wear a slight compressive bandage, and to submit occasionally to catheterism of the œsophagus.

In writing on ulcerations of the uterine neck, Dr. Terrillon states that this ulceration is only a myth excepting of course specific ulcerations. According to the author these so called ulcerations are the result of metritis. The surgeon should therefore treat the metritis without occupying himself about these apparent ulcerations, and these will disappear when the remainder is cured, without having recourse to cauterizations which are so much abused.

The first meeting of the Congress of Dermatology and of Syphilography for the year 1890 will take place on Thursday, the 10th of April, and continue on the two following days, from 9 to 11 A.M., at the Saint Louis Hospital. The programme of the questions to be treated should be forwarded before the 1st March, to Dr. E. Vidal, general secretary, 65, rue d'Anjou, Paris.

The meeting of the Société Francaise d'Ophthalmologie for 1890 will take place on Monday, May 5th, 1890. A. B.

DOMESTIC CORRESPONDENCE.

Army Medical Board.

WAR DEP'T, SURGEON-GENERAL'S OFFICE,
WASHINGTON, D. C., February 8, 1890.

To the Editor:—SIR: The Surgeon-General directs me to invite your attention to the enclosed notice of the organization of an Army Medical Board, to meet in New York City on May 1, 1890, and to request that you will give it a place in your journal as a matter of news, and to call such attention editorially to it as you may deem proper. Very respectfully,

CHAS. R. GREENLEAF,
Major and Surgeon, U. S. Army.

NOTICE—AN ARMY MEDICAL BOARD

will be in session in New York City, N. Y., from May 1 to 31, 1890, for the examination of candidates for appointmenf in the medical corps of the United States army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the Secretary of War before April 1, 1890, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two physicians of repute, as to professional standing, American citizenship, character and moral habits; also, statement of service in hospital from the authorities thereof is desirable. The candidate must be between 21 and 28 years of age and a graduate from a *regular medical college*, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon General, U. S. Army, Washington, D. C. JNO. MOORE,
Surgeon-General, U. S. Army.

CIRCULAR OF INFORMATION FOR MEDICAL MEN WHO MAY BE DESIROUS OF ENTERING THE U. S. ARMY MEDICAL DEPARTMENT.

The Medical Department of the army consists

of one Surgeon-General with the rank of Brigadier-General, one Assistant Surgeon-General, one Chief Medical Purveyor and four surgeons with the rank of Colonel, two Assistant Medical Purveyors and eight surgeons with the rank of Lieutenant-Colonel, fifty surgeons with the rank of Major, and one hundred and twenty-five assistant surgeons with the rank of First Lieutenant of Cavalry for the first five years of service, and of Captain of Cavalry subsequently until their promotion by seniority to a majority.

With the rank stated in each case the pay and emoluments of the rank are associated. The salary of each grade is a fixed annual sum payable monthly; but at the end of each period of five years of service the annual sum representing the pay of the grade is increased by 10 per cent. until 40 per cent. is added. After twenty years of service the 40 per cent. additional continues to be drawn, but the further increase of the pay by 10 per cent. additions ceases, *i. e.*, an officer, although he may have served twenty-five or thirty or more years, can, under existing laws, have no more than 40 per cent. added to his pay proper by way of increase for length of service. The pay of a first lieutenant of cavalry or of a medical officer during the first five years of his service is $1,600 per year, or $133.33 per month. At the expiration of his five years of service he becomes, by virtue of that fact, a captain, and his pay is that of a captain of cavalry, $2,000 per year, increased by 10 per cent. for his years of service, viz, $2,200 annually, or $183.33 monthly. At the end of his tenth year of service this rate of pay is increased by the service-addition to $2,400 annually, or $200 per month, and after five years more the service-addition makes his pay $2,600 annually, or $216.67 per month. If he continue in the rank of captain, at the end of twenty years of service his monthly pay becomes $233.33; but about this time promotion to a majority is usually obtained, and a major's annual pay of $2,500, with 40 per cent. added, makes the monthly pay of the major and surgeon $291.67. Subsequent promotion, investing the individual with the rank of lieutenant-colonel, colonel and brigadier-general, augments the monthly pay respectively to $333.33, $375.00 and $458.33. Compulsory retirement at the age of 64 years increases the rapidity of promotion to the younger men; and when retirement is effected either by age or by the accidents of service prior to reaching the retiring age, the rate of pay subsequently drawn is 75 per cent. of the total salary and increases of the rank held by the individual at the time of his retirement. Thus, a major retired for broken health after twenty years service draws 75 per cent. of $291.67 per month; a colonel retired for age, 75 per cent. of $375.00. The medical officer has the right of selecting quarters in accordance with his rank, and when stationed in a city where there are no Government quarters, commutation money, intended to cover the expenses of house rent, is paid to him. The Government provides forage and stable room for the horses of the medical officer, and when traveling under orders the expenses of transportation are paid by the Quartermaster's Department.

Among the privileges granted to medical, as to other officers of the army, is that of leave of absence on full pay. The authorized leave amounts to thirty days annually. This leave is not forfeited if not taken during the year, but is credited to the officer, who may thus accumulate a continuous leave of four months on full pay. If he desires to be absent for a longer period than four months, and the permission is accorded him, he is reduced to half pay for all time in excess of the four months or maximum of cumulated leave of absence. Absence from duty on account of sickness does not affect the relations of the officer with the paymaster; he continues to draw full pay.

A commission in the Medical Department of the army is an instrument which is good for life, premising conduct consistent with its retention on the part of its possessor; but it involves no contract which binds the individual to service for any given number of years. On the contrary, should the medical officer find on experience that civil life has greater attractions for him than that of the army, there is nothing to prevent him from at any time tendering the resignation of his commission.

A young medical officer, on appointment, is usually assigned to duty for a few months at some large post where there are other officers of his department, to afford him opportunity of becoming acquainted with the requirements of the Army Regulations and the routine duties of military life. After this he goes to some post west of the Mississippi river, where he serves a tour of duty of four years. An assignment in the east follows the leave of absence which is usually taken at this time; and in after years his stations are selected so as to give him a fair share of service at what may be called desirable posts, as an offset to the time spent at less desirable stations.

Candidates for appointment to the Medical Corps should apply to the Secretary of War for an invitation to appear before the Army Medical Board of Examiners. The application should be made in the handwriting of the applicant, should give the date and place of his birth, and the place and State of which he is a permanent resident; it should be accompanied by certificates based on personal acquaintance from at least two persons of repute as to citizenship, character and moral habits. Candidates must be between 21 and 28 years of age (without any exceptions), and graduates of a regular medical college, evidence of which, the diploma, must be submitted to the Board. The morals, habits, physical and mental

qualifications and general aptitude for the service of each candidate will be subjects for careful investigation by the Board, and a favorable report will not be made in any case in which there is a reasonable doubt.

The following is a general plan of the examination:

1. The physical examination will be rigid; and each candidate will, in addition, be required to certify "that he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of any duty which may be required."

2. Oral and written examinations on subjects of preliminary education, general literature, and general science. The Board will satisfy itself by examination that each candidate possesses a thorough knowledge of the branches taught in the common schools, especially of English grammar, arithmetic, and the history and the geography of the United States. Any candidate found deficient in these branches will not be examined further. The examination on general science will include chemistry and natural philosophy, and that on literature will embrace English literature, Latin, and history, ancient and modern. Candidates claiming proficiency in other branches of knowledge, such as the higher mathematics, ancient and modern languages, etc., will be examined therein, and receive due credit for their special qualifications.

3. Oral and written examination on anatomy, physiology, surgery, practice of medicine, general pathology, obstetrics and diseases of women and children, medical jurisprudence and toxicology, materia medica, therapeutics, pharmacy, and practical sanitation.

4. Clinical examinations, medical and surgical, at a hospital, and the performance of surgical operations on the cadaver.

Due credit will be given for hospital training, and practical experience in surgery, practice of medicine and obstetrics.

The Board reports the merits of the candidates in the several branches of the examination, and their relative merit in the whole, according to which the approved candidates receive appointments to existing vacancies, or to vacancies which may occur within two years thereafter. *At the present time there are seven vacancies to be filled.*

An applicant failing in one examination may be allowed a second after one year, but not a third.

No allowance is made for the expenses of persons undergoing examination, but those who are approved and receive appointments are entitled to transportation in obeying their first order assigning them to duty.

JOHN MOORE, *Surgeon General.*
Approved: REDFIELD PROCTOR, *Sec'y of War.*

WAR DEP'T, SURGEON GENERAL'S OFFICE,
WASHINGTON, D. C., December 12, 1889.

MISCELLANY.

LETTERS RECEIVED.

Dr. E. T. Vaughan, Evansville, Ind.; Dr. E. S. Lincoln, Wabasha, Minn.; Dr. D. B. St. John Roosa, New York; W. T. Keener, Chicago; Dr. Theo. Griffin, Baxter Springs, Kan.; P. Blakiston, Son & Co., New York; Dr. J. J. Bland, Houma, La.; Free Press Printing Co., Mankota, Minn.; Dr. W. H. Wathen, Louisville, Ky.; Dr. W. Murray Weidman, New York; Dr. G. L. Simmons, Sacramento, Cal.; N. Y. Engraving and Printing Co., New York; Publishers' Commercial Union, Chicago; E. Merck, New York; Dr. F. C. Hotz, Chicago; Dr. Chas. H. Knight, New York; Dr. L. S. McMurtry, Louisville, Ky.; Dr. R. S. Brice, Keota, Ia.; Dr. Edwin B. Shaw, Kansas City, Mo.; O. H. Haven, Youngstown, O.; Dr. William W. Pearce, Waukegan, Ill.; The Microscopical Society, Chicago; E. Merck, New York; F. C. Lewis, Catskill, N. Y.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 8, 1890, to February 14, 1890.

Capt. B. D. Taylor, Asst. Surgeon, is granted leave of absence for fifteen days, to take effect on the 15th prox. Par. 2, S. O. 17, Hdqrs. Dept. of the Missouri, February 7, 1890.

By direction of the Secretary of War, Lieut.-Col. Charles B. Alexander, Surgeon, is relieved from duty as examiner of recruits at New York City, and will report to the commanding General, Div. of the Atlantic, for duty as attending surgeon in that city. Par. 1, S. O. 33, A. G. O., Washington, February 8, 1890.

By direction of the Secretary of War, Major Henry McElderry, Surgeon, is relieved from duty at Fort Wayne, Mich., and will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for duty as post surgeon, relieving Major Henry R. Tilton, Surgeon, who, after being thus relieved, will report in person to the commanding officer, Ft. Wayne, Mich., for duty at that station. Par. 13, S. O. 33, A. G. O., Washington, February 8, 1890.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted Major Leonard Y. Loring, Surgeon, in S. O. 268, November 16, 1889, from this office, is still further extended two months on surgeon's certificate of disability. Par. 7, S. O. 34, A. G. O., Washington, February 10, 1890.

Major Henry R. Tilton, Surgeon, is granted leave of absence for two months, to take effect upon his being relieved from duty at the U. S. Mil. Academy, West Point, N. Y., by direction of the Secretary of War. Par. 6, S. O. 34, A. G. O., Washington, February 10, 1890.

By direction of the Secretary of War, the retirement from active service on February 9, 1890, by operation of law, of Col. Andrew K. Smith, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Col. Smith will proceed to his home. Par. 5, S. O. 34, A. G. O., Washington, February 10, 1890.

By direction of the President, Capt. Louis W. Compton, Asst. Surgeon, is detailed as a member of the Army retiring board at Chicago, Ill., convened by War Dept. order dated November 18, 1889, published in S. O. 269, November 18, 1889, from Hdqrs. of the Army. Vice Major Henry McElderry, Surgeon, hereby relieved. Par. 9, S. O. 36, A. G. O., February 12, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 15, 1890.

Medical Director N. L. Bates, ordered to Naval Hospital, Mare Island, Cal.

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ORIGINAL ARTICLES.

THE USE, TWENTY-FIVE YEARS AGO, OF POLARITY, FOR LOCATING THE WHEREABOUTS OF A LEADEN BULLET DEEPLY IMBEDDED IN THE BODY.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ADDINELL HEWSON, A.M., M.D.,
OF PHILADELPHIA.



In the records of most, even of the greatest of this world's heroes, events of much moment, which it was important at the time of their occurrence, should not be made known, have often been so completely, and long suppressed as to subsequently render the possibility as facts almost incredible. Such may seem with some of my hearers to be the case as regards many of the circumstances associated with the incident which it is my purpose to relate in this communication.

It occurred in the life of one of the truly great heroes of our internecine war, and, at a period when its publication would have been demoralizing to the Union cause, yet it involved such a brief space of time as not to necessitate its being recorded, or any account made of it; and the events which rapidly followed in this hero's life were of such a momentous character as to entirely overshadow it.

This officer's injunction to me on my first seeing him on this occasion was for the greatest secrecy as to his being in Philadelphia under my care, as well as to the character of his injuries, and was absolute, and given to all others as was evidenced by how universally it was heeded. It was, I believe not known at all at the quarter-master's office in Philadelphia until after he had been on and gone back to his post again. Finally the injunction to secrecy with me was, as a consequence of his rapid convalescence so removed within three days of his reaching me as for him to permit my describing to my hospital class what I had done in the case. Still I was not then or afterwards, as he said, to anticipate the account he would give of the event in his autobiography. A quarter of a century has since passed away and for more than half of that time this hero has been in his grave, and that too without any detailed account of his life having yet been published. The recital of these facts is therefore essential as a prelude for the proper comprehension of the form of account which I shall now give of the circumstances pertaining to it, and must also serve to explain the omission of names and other facts, the narration of which would no doubt add vastly to it as a whole.

On the evening of Saturday, June 20th, 1863, I received a telegram at my office to call the following morning at a private residence in Philadelphia, which I knew as that of an officer in the Union army, and, recalling the fact that he had been in Philadelphia, about a year previous, to see me for a few days on account of a wound he had then received in battle, I at once thought he had again been so injured and was prompt in making my visit to his house the next morning at the time when it would be, then Sunday morning, least likely to attract attention in the neighborhood; for I knew, from the previous occasion, that he would be desirous of preventing any knowledge of his being home, getting abroad.

As my carriage passed along a cross street in my way there I noticed a field coat hanging from the rear of the second story of his house and then surmised that he was undoubtedly home and this time most likely wounded in the body. On entering the house I was told that he had been brought home fatally wounded by a ball in his lungs and I was taken immediately to his bedroom. There I found him sitting up in bed, evidently in much suffering, but on his seeing me he was not willing to answer a single question until he said that he must be back at his post within five days, and, that I was to observe the greatest secrecy and silence. All of which showed, as I knew him, to be a man of strong nervous temperament, a state of much excitement, and my first action then was that usual with a patient suffering from an injury in the chest, namely, the sounding of that part of his body by percussion, directing him not to talk whilst I did so. It surprised me exceedingly, and I immediately ran one of my

ears up and down each side and on the front and back of his lungs with sufficient care and slowness to allow me to detect his breathing throughout both. Then I could suppress my surprise no longer and exclaimed, "Why there is no bullet in either one of your lungs, there is no sign of either side having been penetrated by one." "Ah, wait until you have me thoroughly uncovered, and have explored the wound," said he. On removing his clothing I found a single, clean-cut wound, vertical in direction, about half an inch in length, located close to the outer border of the left shoulder blade, just where that bone usually rests in front of the eighth rib. There were no signs of the rib having been broken, or even uncovered, of the spaces between it and its fellows either above or below, having been penetrated; though I searched for such most faithfully, with the aid of a delicate probe and sounding board attached to it; my attention was then directed to his breathing for the second time. His respirations were evidently those purely characteristic of a man, there was no heaving of the upper chest. He was leaning forward and especially to the left side, as though he was constantly being impelled to prevent the expansion or separation of his ribs there. His respirations were short and frequent, and his heart was much agitated. His temperature above normal. To determine accurately his pulse I drew out my watch from my vest pocket, by means of its guard to which was attached at its far end a small compass which I had been wearing there for many years as others did various forms of "charms." Its presence suggested at once in connection with the character of the cut which the ball had made through his clothing and in his side, the possibility that the said bullet might be a steel one, as the Southerners were then using such in the rifles recently imported for them from England. Following up quickly this idea I carried this compass close to the integuments across the patient's chest, up and down, and in every conceivable manner and direction. At first the needle did not seem to be disturbed any more than was naturally consequent to the changes made of its poles by those movements. This was particularly the case when the dial plate was being held horizontally and in close proximity to the wound of entrance; the patient being seated astride of a chair with his back toward a window facing North. When the needle was then parallel to the side of chest its North pole pointed to the window and was quiet in that position; but as I moved the instrument more around toward the spinal column I thought I perceived some agitation of its needle greater than that due to the movement and that this was greatest when it was at the level of the wound of entrance and nearest to the base of the shoulder blade. The patient had no recollection of the moment of his receiving the ball or how it reached him; indeed he had not become aware of his being wounded until his attention was called to a free bleeding on his outer clothing above his sword belt. He was, at the time, making reconnoissance of his opponents who were in advance on his bridle path.

As he further answered in the affirmative to my queries that he was mounted and holding a high rein, I took his left fore-arm and supporting the elbow nearly on a level with the front border of the arm-pit of that side and drawing it forward and across the chest I caused him considerable pain in the vicinity of where I had previously noticed the agitation in the magnetic needle to be the greatest. Putting the compass in the same attitude as before, I again got the agitation still better marked. Then, laying down the instrument which I had been holding with my watch by my right hand, I found, by pressing the index and middle fingers of that hand on the spot indicated, that there was some ill defined hardness, firmer pressure on which caused him more decided pain and I was then confident I had there discovered the locality of the ball. This I stated to the patient, endeavoring in doing so, to have him understand how all previous examinations had failed to reveal its whereabouts, but I was quickly interrupted by his saying, "Oh, I have no fault to find with what has been done or left undone. What I want to know is whether you can get it out; and if so, I want you to do it as speedily as possible." For that purpose I provided myself with a small scalpel, a pair of bullet forceps, a grooved director. And, as he was not willing to take ether or choloform, I used the analgesic effect of ice sprinkled well with table salt and pressed firmly on the place for some eight or ten minutes, when the surface so pressed on, which was for the extent of about three inches in diameter, became purplish white and was found to be insensible to the touch. Then, on removing the piece of ice and placing the compass in the position in which it had showed the greatest disturbance before, it became more agitated than ever and I proceeded to make an incision there on to the posterior border of the shoulder-blade at an angle of about forty degrees to the spinal column and over two inches away from it. This was a straight cut of an inch in length, so directed as to separate rather than to divide the fibres of the muscles which I knew I must get through there, to reach the desired object. That incision, at a depth of about two inches, brought the point of my scalpel directly on to a hard substance in surrounding soft muscular tissue, which, by further contact, was readily recognized as metal, and which, after some expanding of the cut, was shown to be the bullet between the two great muscles—the subscapularis and the serratus magnus—which are fastened together on the base of the shoulder-blade, and I had concluded had to

be cut through before I began the operation. The completion of the operation—that is the extraction of the bullet—was quickly effected, and the brief and partial freezing of the parts through which it had to be done, rendered it one of absolutely no pain whatever to my patient. Indeed, he seemed at first unwilling to accept my assertion that I had succeeded in my undertaking, but his conviction to the contrary was promptly brought about by placing the bullet in his hand. I then cleansed the wound and brought its edges together carefully, so that they were in perfect apposition throughout, and secured them, so, by means of Goddard's strips of gauze and collodion supported by a roller bandage which was made to retain the arm in perfect rest. I then had my patient put into his bed, and, after directions about his diet, and that he should be kept perfectly quiet, I left him, going to an adjoining room, where I carefully washed and examined the bullet and then gave it to the patient's wife for her to keep, and that too without any comment upon it. On calling in the evening and learning that my patient was sleeping quietly, I left the house without disturbing him.

On my visiting him the following morning he quickly called my attention, as I had expected, to the fact that the bullet was not, after all, a steel one, but one of lead, or at least of a soft metal, for he had had it thoroughly cleansed and then scratched across the surface by a knife with which it was readily uncovered and penetrated; saying as he had the ball handed to me, "Your compass could not have really helped you to find it, for it is leaden, and every school boy knows that anything of lead cannot disturb the pole of a compass." "Oh," I answered, "Such used to be considered correct but, as far back as 1829, Bailli showed that bismuth would act in the opposite direction to iron on the magnet." This I said in the spirit of playful humor and was about to remark further, that Faraday had, something like forty years previously, shown the power of a great variety of articles; of liquids; of gases, and of salts, including those of lead, to excite motions of various kinds in the magnet, when my patient manifested some dissatisfaction in his manner and I saw I had spoken imprudently, and not only checked myself, but at once agreed not to talk of the matter again, as I desired to avoid doing or saying anything which might interfere in the least with his rapid recovery. How well I accomplished this purpose was evident from the rapidity with which he did recover. There was no suppuration whatever along the track of the ball or from where it was removed, and he returned to his duty on the night of Friday, June 26th, within five days of the time of his being subjected to the operation by me.

The compass I used in this search was a Christmas gift from a playmate when I was a boy and had not only been constantly worn on my guard, from the time I first had a watch in those days, but in my student life in Philadelphia, Paris, London and Dublin. It had served its purpose in my walks in the vicinities of those places and as a guide through the charming regions known as the Lake Districts of England and those of Wicklow and Arklow in Ireland.[1] It consisted of two hemispherical bowls of gold of the relative sizes for their outer rims of the one cent and two cent coins, United States currency of the present day. The larger measuring seven eighths of an inch and the smaller thirteen sixteenths of an inch in their diameters respectively, fastened together by two gympal pins so that the latter bowl could not only always rotate inside the former, but would have its face, or equatorial surface, of glass, constantly looking up and horizontal. Through that glass could readily be seen the dial plate with its plain black and very distinct letterings; the needle, mounted on the pivot by its flat cap of brass which allowed the utmost freedom of motion in every direction, the inner surface of the glass near enough to this cap to prevent its getting off the pivot, but far enough away for the free dipping of either pole—the actual length of the needle from one extremity to the other, just one half an inch—that of the sections, North and South, of the cap, three sixteenths each, leaving just one eighth of an inch for the diameter of the cap. The north section of the needle was of a positively dark bluish hue whereas its south section was of an equally distinct whitish steel color. The dip of the far end of the north section and the corresponding elevation of the extreme of the south section from the centre, all made this trifling looking "little charm," an instrument of real value for experimental investigations.

The loadstone and the compass were the subjects of scientific interest to which the earliest of my recollections could ever refer. I had six brothers and two sisters older than myself, so that, when I began to get out of the nursery at home, the companions of the oldest of them were at an age to be objects of special attention for me, particularly as to all they said and did, and as one of the most companionable of them was then preparing to enter the navy, he had *his* loadstone and *his* compass, the mysteries of which he was always ready to show to even the least of us all. The naval battle he treated some of us to on one occasion in a wash-tub in my father's garden, stands farthest back in, but never can be lost to, my memory. The ships were represented by chips of wood with well-defined bows and sterns, and two or three masts according as to whether they were to be considered as sloops or frigates

[1] The initial picture of this paper is an accurate representation of it, both as to size and appearance, with the needle pointed as though the reader was sitting with the top of the page looking East

of war, which were the characters of fighting vessels in those days. Each single decker had its proper number of guns made of fragments of sewing needles extending across its upper surface, the points, heads, and broken ends of which fragments, were each charged by the loadstone for special sides, that is, by the north pole for the right side, and by the south pole for the left, so that when these chips were pushed from opposite sides and made to approach near enough to exert the magnetic influence of their bits of needles on each other, one set repelled the other—they ran away from each other—the lesser ones apparently fleeing from the larger ones more rapidly and being made to turn more away so that the scattering of them was not symmetrical, whereas when they were started from the same side of the tub and approached, they very quickly collided, the larger ones evidently running with more force into the smaller ones and striking them at such an angle as in some instances to upset the ones so impinged upon. The angles of impingment gave as much, if not more, variety to this form of battle than occurred in the other, and always made its repetition more enjoyable.

Then, again, another frequent visitor at my father's house, and, companion of some of my older brothers in my early boyhood, was one of the sons of Dr. John Redmond Coxe, professor in the medical department of the University of Pennsylvania, and living at Ninth and Walnut streets (in the house next but one to that of my father) and which was afterwards occupied by Dr. Hugh L. Hodge, when he was a professor in that same institution. There may be some of my hearers to-day who recollect the offices attached to that house and the immense collection they contained in Professor Coxe's days, of books, philosophical apparatuses, and instruments of various kinds. I remember, as though it was but yesterday, being on one of those days taken by that son of the professor into the front room of those offices and shown many compasses and electric machines, and especially the spark which the latter produced. I was then, first of all, warned against touching the machine by which those sparks were being generated lest I should get burnt by them, but shortly afterwards I was induced to take hold of a handle which was attached to a covered wire which was suspended on the wall around the room and whilst holding it my entertainer passed a spark to the other end of that wire and I instantly felt the shock from it and I screeched for terror. That incident was of course not soon forgotten and was quickly recalled in all the details when Morse's proposal to create a telegraph by sending such sparks along insulated wires mounted on high poles in the roads between various places was first made known to me.

When older my delight was to revel in all the oddities and curiosities of my father's library, which had been collecting for more than three generations in his family. I was not slow then in ascertaining the whereabouts not only of his father's (William Hewson, the anatomist) books on blood and the lymphatics, but the MSS. for the same, and for all his papers to the Royal Society of London, the "Copely Medal" awarded to him by that society for his being the greatest discoverer in science for the year 1769. With them were stored many of the original drafts of Franklin's letters to the scientists written by Mary Stevenson (afterward William Hewson's wife) whilst Franklin was an inmate of her mother's house, Craven street, Strand, London, *i.e.*, during all the time he was agent for the Colony of Pennsylvania to the British court. Here came an extension of my interest and knowledge in the magnet and subjects relating to it. Before I was fourteen years old I had made for myself a generator of electricity and a Leyden jar for its accumulation and preservation.

Hence, when I went to London for the first time, in 1850, shortly after receiving my degree of M.D., I had not only my "little charm" on my watch-guard, but was prepared, with long accumulating interest, to enjoy everything I might learn there about the subject, and through very fortunate circumstances I immediately on my arrival had free access given me to Faraday's laboratory and studio. There I enjoyed with more than ordinary delight the appliances by which that great philosopher, years before, had startled the scientific world by demonstrating the existence of *polarity* in everything; explaining thereby, not only, the long familiar experiment of the arranging of particles of iron-filings in curves, when they were placed on a sheet of white paper near a magnet, but those of the hairs of animals, of the human body also, of the feathers of birds, of the stems, blossoms, flowers and foliage of all kinds of vegetable life. There Faraday had demonstrated magnetism and also the presence of distinct polarity, in each particle of all such substances, the oppositely polarized end of which particles being the occasion of their cohesion together and the surplus, over and above needed for that purpose, he there had shown was the occasion of the curves in nature.

My dear "little charm" had then fresh interest given to me. For after those delightful and well to be remembered visits at Faraday's rooms, I was led constantly to study the disturbing influences which many articles seemed to have on its poles. Thus, when stage-coaching immediately afterwards in England—a luxury rarely to be met with even in those days—or when riding

NOTE.—This device of Prof. Coxe was undoubtedly the basis of the claim made for him as an originator of the electro-magnetic telegraph before Morse. Prof. Tyndall (notes of two courses of lectures before the Royal Institute) fixes the date of Coxe's proposal about 1808.

in railway cars or walking, I would take my bunch of keys and study what effects its individuals produced on the needle. Some, many indeed, had no effect on its north pole when near it, others would increase when there its dip; others again, when approached to its south pole, would agitate it or cause its nearer contiguity to the glass and keep it there.

These circumstances had been quickly recalled to my mind, and furthermore, when in connection with this case I afterwards took up the subject anew, I found much in addition that was of special interest relating to it, and to which I must make some references before closing this communication.

First, there were the physical conditions of the bullet itself and its immediate surroundings of which I had to take account in estimating or appreciating its power to disturb the polarity of my compass. Its metal (lead) as shown by Faraday as far back as 1830 was not only capable of acting on the south pole of a compass as in contrast with iron and zinc which acted on the north pole, but such action was to be found much increased by the locality where it was lodged, for there the heat and moisture was peculiarly great, as Lavoisser had demonstrated as long ago as 1777. He then showed that those conditions of heat and moisture were not only greater in a locality like that between the subscapularis and latissimus dorsi, than immediately under the skin, but than in the lungs or plural cavities themselves. Mariani (*Annales de Chem.*, p. 40) states that they—heat and moisture—according to his researches increased this power of lead to act on the south pole of the compass, and Mons. de la Rive more recently (*Biblioth Universal*, vii. p. 388, 1837) has stated that the effect of 5° of increase of heat alone produced in his experiments a deflection in the galvinometer he used of from 12° to 45° when applied to the south pole, whereas the same produced no effect when applied to the north pole. Faraday (series xvii, p. 64 of his 2nd volume), speaking of this statement of De la Rive, says that in a repetition of those experiments he has "no doubt that the phenomena will prove to be virtually the same." Then, also, Claude Bernard, whom we must all recognize as one of the most accurate experimental physiologists of the present time says that hot air acting on the skin creates a rise of temperature more rapid than when the same is merely introduced into the pulmonary vessels. He proved also that when the hot air is damp the phenomena take a more rapid course and were as great as at dry, a lower temperature, and furthermore that dampness promotes a rise of temperature by itself.

Secondly, there were the physical conditions about the compass itself of which I was not to lose sight in my estimation of the circumstances which affected the phenomena I have related. Of these I was well prepared to make good count likewise through previous study. I refer here to the details of materials I collected prior to 1857 for my paper "On the influence of the weather on the results of amputations in the Pennsylvania Hospital during a period of thirty years." (See Pa. Hosp. Report for 1857.)

Before entering on the consideration of these conditions we must have some accurate and definite scientific idea as to what the needle of the compass is. Faraday states (series xxvi. for Oct., 1850, p. 254) it is "a balance on which all the magnetic power around a given locality fastens itself, and it shows for each place every variation in their amount or disposition, whether that occurs near or far off. Its mean position is the normal position, and as regards atmospheric changes the fixation of the lines of force in the earth (2919) is that which tends to give the lines a standard position (exclusive of secular changes) and so bring them and the needle back from their disturbed to their normal state." The size of the needle of the compass I used in this case I have given (on p. 10 MSS.) as that of one half an inch from the end of one pole to that of the other. This according to the best of authorities (Charles Augustine de Colomb Sur l'Elect. et Magnetisme, Paris, 1789? and Capt. Kater, the inventor of the prismatic compass) was sufficient to manifest all the various secular disturbing influences within several inches of its locality and possessed advantages over one that was more than five inches long, for in the latter several poles are apt to be produced, the effect of which is to lessen the force of the single polarity sought for. It is also composed of shear steel which according to those authorities was found to be the best material for the purpose of making a very sensitive compass needle with.

With these facts before us we may now fairly take up the consideration of the various physical conditions surrounding the instrument which might depreciate or increase the power of the leaden bullet to act on the needle. These conditions were essentially those of the atmosphere and of what could affect it where the patient was at the time. Here we have to take account of the temperature of the air, the presence or absence of the sun's rays, the state of the barometer, the presence or absence of moisture, the actual locality of the patient as to his being in or out of the open air, as well as to the relations of his body to the points of the compass, and also even to the time of the day at which the explorations were made; for these are all well recognized as disturbing causes of such conditions. Even Faraday, whom I have quoted from very freely heretofore on account of his being the most accurate and logical writer on the subject we can refer to in any language, says (2936), "The well-known action of the sun on the needle is very indirect;" "the sun at a given

place affects the atmosphere, the atmosphere affects the directions of the lines of magnetic force, those lines of force there affect those at any distance and they affect the needles which they respectively govern." Again I can quote the facts from said authority that "the variations in the intensity of atmospherical magnetism is greater before the sun crosses the meridian" (*i. e.*, before midday), and "when he is uncovered or shining brightly in the place where the observations are being made."

The concurrence of all those conditions in favor of the action of the leaden bullet on the compass proved to me most singular. The time was before midday—it was a hot day in June, whose early morn was close and overcast, but whose sky was quickly cleared as the sun approached the meridian and shone through the open window before which I had my patient seated astride of a chair, with such brilliancy as to cause those present to hail his rays with warm expressions of delight at the time, the patient specially exclaiming, "Oh, that is a hopeful and encouraging sign"—an exclamation to which I readily assented. I had indeed to push him somewhat away from the window to get him out of the sun as I arranged things for the operation, but in doing so I kept his left side nearer to the window than its fellow and so, without any such purpose in my mind, I placed him more correctly on a line with his back looking due north than he was before; the surface of his back having been previously parallel to the window, and the latter being parallel to the main street, was therefore actually nearly two full points (of 32°) out of the way.*

Finally, I must refer to the action of my compass when placed on the patient's back whilst that surface was so frozen by the direct contact of the ice and salt as to allow of its being cut into immediately afterwards, with the utmost freedom, without causing him pain. This action was one of a positive increase of the attraction and of the agitation of its south pole over what I had noticed as occurring with it in the same locality before the application of the freezing process. No time was noted as to the length of that application before I tested its effects on the needle. It was recorded that the surface for an area of 3 inches was of a purplish white hue, hardened and insensible to the touch. The inner bowl of the instrument was then put in close contact with that surface and when there it was moved about, in a range of 2 inches of the whereabouts, as I then supposed, of the ball; the needle was then more agitated and more markedly attracted to one special point than ever before. The change in temperature which the application of the ice and salt had caused was from without inwards and was greatest on the surface of the skin. It was never such as to seriously affect the vitality of any of the tissues. Those of them which were readily visible, soon after their being cut into, quickly recovered their natural tints and gave vent to some bleeding. That in which the ball was lodged contained enough of old clot and serum to surround the ball and was positively warmer than the surface of points considerably far away. It had not been reached by the freezing, and showed in the changes of its effused blood the effects of heat and moisture, rather than of cold, certainly than, of that sufficient to produce solidity and dryness of the other tissues. A study of the changes in those tissues which constituted the medium of communication between the ball and the needle then made it quite apparent that it was in them that was to be found the cause or causes for the increase of the disturbances of the needle over what had been previously observed. The freezing application used in this instance can, according to Sir Humphrey Davy, reduce the temperature of substances and liquids 50° F., the resulting solidification being essentially dependent on changes in the water present in them. It starts when that fluid gets down to the temperature of 39° F. The water then begins to assume an opaqueness which reaches its completeness when every primitive particle of water in it has actually gotten own to 32° F. They are solidified at that temperature into a mass which is lighter than their original bulk of water, and was first shown by Boyle to be one-ninth greater in bulk. This expansion has been shown also to equal a force of 27.720 lbs. for each cubic inch. The forming of ice is attended by an arrangement of the primitive particles of water with each other different from that which existed in their previous state They have a greater attraction set up for each other than existed before, and so become separated more or less completely from substances or fluids previously suspended or maintained between them, an action which has been used, as distillation is, to free fluids and substances of their superabundance of water or, in other words, to concentrate their strength. The facts as regards the reduction of temperature which I have now related as concerned on the solidification of water will aid us materially in the explanation of the disturbances of the compass noticed after the application of the freezing process to the patient's back. The tissues under it had become decidedly opaque, dry and solid, as well as devoid of sensibility. The first three (physical) conditions evidently being the effects of the reduction of the temperature of the tissues below 39° F., but as those tissues did not have their vitality materially disturbed, it is equally evident that their temperature never got below 32° F. Say it was only 34° and we have the authority of Faraday that such a temperature would intensify the action of lead on

* Note.—The streets of Philadelphia as laid out by Wm. Penn were intended by him not only to be at right angles to each other, but to correspond with the four main points of the compass, which they are now known not to do for the extent above specified.

the south pole of the magnet most markedly, especially when the location of the metal was no further away than 3 inches beneath the surface. We have also hosts of authorities amongst recent experimental physiologists that the changes of magnetic conductibility of human flesh arising from variations in it of temperature above or below the average of the body in health (67° F.), accurately corresponded with each other; *i. e.*, that an increase, say, of 5° above that point brought about the same effect in that respect that a decrease of the same number of degrees would. We have, however, seen that the increase of the temperature in my patient's back, although positive and readily recognizable, was not of many degrees Fahrenheit; whereas, that of loss by the freezing process must have been at least 30° of the same scale. Six times greater! I certainly do not need to pursue this point further to prove the correctness of the effects observed by me.

1434 Spruce St., Philadelphia.

TROPHOPATHY IN THE FATTY AND FIBROID DEGENERATIONS; JOINT PAPER.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY EPHRAIM CUTTER, M.D., LL.D.,

GOLD MEDALIST OF THE SOCIETY OF SCIENCE, LETTERS AND ART, LONDON; AUTHOR BOYLSTON PRIZE ESSAY FOR 1857 ON "UNDER WHAT CIRCUMSTANCES DO THE USUAL SIGNS FURNISHED BY AUSCULTATION AND PERCUSSION PROVE FALLACIOUS?" PRINCIPAL MEDICAL DEPARTMENT OF INSTRUCTION OF THE AMERICAN INSTITUTE OF MICROLOGY, ETC., AND

JOHN ASHBURTON CUTTER, M.D., B.Sc.,

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INTRODUCTION

The animus of this contribution is the belief of the writers that *trophopathy* (*trophos*—food; *pathos*—disease) has more to do with the cause and cure of the so-called incurable diseases than the profession gives credit to; and to show that our belief is founded on facts, we will immediately proceed to the consideration of the subject in the concrete, to wit: the reading of histories of some patients that have been under our care.

CASE HISTORIES.

Case 1.—A little more than four years ago, a gentleman brought to our office a friend, who appeared to the senior writer almost moribund; indeed, he feared that the man would die then and there. Examination showed the case to be suffering from an enlarged heart, a fibroid liver and Bright's disease of the kidneys; the urine contained albumen, casts and fatty epithelia. We will here make the note that in our study of patients for the evidence of Bright's disease, not so much attention is paid whether the casts are fatty, waxy, hyaline, etc. Amyloid bodies are usually found in the urine when the kidney is first breaking down. *But we consider no case to be full-fledged Bright's disease, till albumen, casts and fatty epithelia are found.* There may be any one of these three, or any two. It is a common matter to find such cases which are just hovering along the margin of health and disease. This patient, desperate as his case was, went under the treatto be further on described, recovered, and ought to have been here to-day for your examination. His heart, liver and kidneys are now doing healthy work.

Case 2.—About one year before his death, America's greatest laryngologist, Dr. Louis Elsberg, came under the care of the senior writer. His case was one of Bright's disease with all the signs as before enumerated. He was placed on rigid diet and would take no medicines. This regimen was followed out for several months and all of the morphological and chemical evidences of his disease disappeared from the urine, as testified to by an eminent pathologist of New York who, unknown to us, was following his case. He was allowed some lee way in his diet. The senior writer called one morning early at his office and found Dr. Elsberg at breakfast eating freely of all the starches and sugars that were placed before him. It was said to him, "Elsberg, if you persist in this reckless diet, you will kill yourself." The medical world knows how he died suddenly of pneumonia, perhaps Bright's disease of the lungs.

Case 3.—About four years ago, a millionaire was treated for two months for Bright's disease of the kidneys and lungs. At the expiration of that time, being improved and feeling *too poor* to continue under a physician's care, he undertook the direction of his case; ate wrongly, overworked and, while superintending some repairs in his house, was poisoned with sewer gas. The doctor was sent for again, but the good work that had been done for him in the two months of treatment was thoroughly undone, and he died.

Case 4.—June, 1880, the senior writer called to see his daughter-in-law in a non-professional way. She was within three weeks of her expected confinement of her first child, and to his horror he found her bloated, and on examination the urine proved to be heavily albuminous and contained casts and fatty epithelia. She was placed on a rigid diet, but labor came on in thirty-six hours and she was easily delivered of her child, which weighed but $3\frac{1}{2}$ lbs. The placenta was covered with numerous elevations which, under the microscope, proved to be made up of plates of cholesterine. Two days after confinement, a steam fire engine came to the corner where she lived, and fastening to a hydrant commenced to pump. The noise worried her; entreaties to the engineer to desist were of no avail, and the poor woman went into convulsions. The senior writer arrived

soon afterwards. She was kept under the influence of ether and was purged, but the convulsions did not cease till thirty-six hours had elapsed. She was then placed on a diet of beef-tea; no medicine. Later on broiled steaks were given her. The face was drawn to one side and her brain was very weak. The regimen was persisted in till the pathological evidences were removed from the urine, and since this time her diet has been mainly two-thirds animal and one-third vegetable. She has borne two more children, both of whom are much more rugged than the first.

Case 5.—Mrs. Blank went on treatment about four years ago, and on thorough examination was found to be sick with fibrous consumption, Bright's disease and a small fibroid tumor of the womb about the size of a man's fist. The evidences of Bright's disease disappeared, the fibroid tumor has gone, and we can say that she is cured of her fibrous consumption if there is such a thing as a cure of a chronic disease. She is now passing through the change of life and cannot be called a thoroughly well woman.

Case 6.—Three years ago, a young married woman came to our office and was found to be sick with Bright's disease of the kidneys—indeed, it is rare to find urine that contained as many casts, and of all kinds, as hers did. She was placed on treatment, and in one month's time the pathological evidences had nearly all disappeared. She persevered and is to-day enjoying good health.

Case 7.—The Rev. Dr. —, treasurer of a missionary society, came under our care about the same time as case 6. He also had Bright's disease. Was placed on treatment, though keeping at his work. His loss of flesh and strength at first greatly disturbed his wife, and it was hard work to make her believe that he should be held to the plans. After three months he took a vacation in Maine, still pursuing the plans of diet and medication, and in the fall came back to work. This case may be called *in progress*. His occupation is very laborious, tiring to the mind and full of worry. At the present he is under the plan of two-thirds animal and one-third vegetable food, eating one kind of meat and one kind of vegetable at a meal. June 18, 1889, his specimen presented no casts, no fatty epithelia and but a trace of albumen. Yet he tells us that he has never in his life worked so hard as the last month, and wonders that he holds on as well as he does.

Case 8.—In 1877, the senior writer saw in consultation a lady who was said to be dying of Bright's disease and whose attending physician wished blood to be transfused into her veins. She was as white as the sheets she lay between, was vomiting, and her urine confirmed the diagnosis made by her attendants. Before going back to Boston to get instruments to transfuse with, the senior writer sat down beside her and, taking a diet list from his pocket, asked her if she could eat the different foods named thereon. She said "no" till tripe was reached, when she said she could eat that. So ordered. On returning with instruments the next day it was found there was no need of operation, as the patient had retained the tripe and was better. In March, 1886, we were in this neighborhood operating on a case of uterine fibroid. The father expressed to the son a desire to see if this woman was alive, and on calling on her attending physician learned that she was, and on visiting her found a large, florid woman who said "that she was not much of a woman for work, but was far from being dead." It seems that she lived on tripe and milk warm from the cow, with other animal food, for over two years. By that time the evidences of Bright's disease had gradually and entirely disappeared from the urine.

Case 9.—Some years ago Miss A. B., æt. 24 years, was put on strict diet for her fibroid, which was of some years' standing; it was monolobed, interstitial, hard, invested the whole uterus and extended beyond the navel. She ate beef mostly with clear tea and coffee, and took a simple tonic. It was much against her appetite but, as she was a woman of few words and of a determined will, and had confidence in her medical adviser, she persevered until her uterine fibroid had all disappeared, and she remains to-day in perfect health. At the present, in handling these cases of uterine fibroids, both diet and galvanism are employed, the latter according to the rules laid down by the senior writer in 1871. No one can say that this case was cured by the menopause, as so many medical agnostics as to the curability of uterine fibroids by either galvanism or food or both, claim. *The history of the last eighteen years has proved conclusively that uterine fibroids are no longer opprobria medicorum.*

Case 10.—1882. Mr. H. L. H., a small, not robust man over 60 years of age, for many years had had difficult digestion, caused by overfeeding of vegetable food, so that the stomach was distended, walls infiltrated and hardened, causing a fibroid condition of the organ. When seen by the senior writer, he had been under treatment by Dr. Salisbury with hot water, chopped beef diet, stomachic medicines, etc. He ran down rapidly under the treatment, vomiting often and severely; throat sore and deglutition difficult, emaciation, weakness, some fever at times. He had fainting fits and appeared so moribund that his wife thought he would die in her arms. His hands, feet and legs were cold, circulation feeble, stomach distress great, mind clear and tractable. There were also complete dulness on percussion over the hepatic region; the abdomen empty, walls drawn toward spine, flat, hard, not tender. He took no food by the mouth but beef-tea by the rectum,

was given nitric acid sponge baths, one teaspoonful to one pint of warm water, night and morning. Biniodide of mercury, $\frac{1}{16}$ gr., was given twice a day; 1 gr. of the sulphate of quinine was sprinkled once in two hours on the tongue, which was white and coated. Compress of linen cloth wet in the nitric acid bath was placed over the hepatic region and kept there till the skin was red. Though the vomiting continued for a little time, the effect of the rectal aliment told. The administration of mercury was followed by a diminution of the liver dulness. Soon he was able to take of the beef essence by the mouth; though he had no appetite, still he kept taking it, and by degrees increased the amount till the essence of 6 lbs. of beef daily was used by oral and rectal alimentation. Moving very carefully, the rectal administration was given up and the beef essence continued by the mouth. The case slowly improved, the urine showing less and less reaction of bile, the dulness of the liver running abreast, with the exception of a few days—that is, the dulness diminished with the diminution of bile in the urine. In the course of six weeks the appetite returned, former treatment was resumed, and he was cured and remains so, 1889.

Case 11.—In 1877, Mr. Luther Whiting Mason, of Boston, was sick of pretuberculosis, was cured and went to Japan and introduced successfully Western music. While there he was again sick; the physician (an American) made out a diagnosis of Bright's disease and told him he would die if he ate animal food alone; but he did eat animal food, was cured and is here to-day.

Case 12, eight years ago was also sick of Bright's disease of the kidneys and was cured by the treatment to-day indicated. He is here for your inspection.

Case 13 five years ago came under the same treatment for the same disease; has been cured, *i. e.*, the morphological and chemical evidences have disappeared from the urine and he attends to his work. He is present to-day.

Case 14.—In 1876, a middle-aged mother of a large family lay sick in bed of great grief at the loss of her last daughter, who had died from effects of the perforation of the vermiform appendix by an orange seed. There were present cardiac hypertrophy and insufficiency of the left auriculo-ventricular valve—severe attacks of angina pectoris when it seemed that death was near. The objective lesions other than those named were retroversion, engorgement, hardening, eversion of the os uteri, and behind the uterus four small, hard, marble-like tumors; very severe pain, sharp and stinging, in the pelvis mostly; profuse vaginal discharge, not bloody; menorrhagia. Added to this there was loss of appetite so complete that everything in the nature of food was loathed, even milk being repulsive; loss of flesh and strength, being unable to rise erect for ninety days; inability to lie on either side for most of the time; nausea; legs cold and sweaty up to the knees; oft-times great stomach distress, with wind colic; urine high-colored and of a rank smell as if putrid; bowels constipated; a terrible feeling of nervous restlessness, causing her to move her feet rapidly up and down in the bed; visitors coming and assuring her by their looks and actions that she was about to die. Added to this there was cancer in her family, her father having died of cancer of the stomach and her maternal grandmother of cancer of the breast. She was put on general and local treatment, and it was faithfully carried out in connection with good nursing; but she gradually grew worse, until at the expiration of three months the symptoms were so alarming that the senior writer was obliged to take strong and decisive grounds, and to tell her, "You must eat, or die of cancer of the womb; make up your mind to one or the other." She decided to live and to eat; eating against her appetite, but with her intellect and reason and the advice of her medical attendant. She began with tenderloin steak, broiled and cut up very fine. The most she could take at first was a quantity represented by two teaspoonfuls. These she swallowed by a desperate effort, her stomach rising against it, She was so fed every four hours. Even after she had fed in this manner for weeks she felt she would rather die almost than eat, but battled against appetite by sheer force of will. The only way she could get down the beef was by swallowing one mouthful of lager beer, which was the only article which did not go against the stomach. The quantity of meat was increased gradually and she was fed two months against the appetite. The nausea, however, left in about three or four weeks, and at this time she was able to move some, and was placed in a Cutter invalid chair part of the day. After two months of feeding she was taken carefully to the seashore, and there she began to get an appetite, but it took one year before she could walk 500 feet. This case did not fear death, but the form. The results obtained by food are in her case:

1. Heart normal in size.
2. Valvular insufficiency hardly perceivable.
3. Angina pectoris gone.
4. Uterine disease relieved; tumors disappeared, uterus mobile, discharges normal.
5. Urine clear as champagne, 1015–1020 specific gravity; no odor, no deposit on cooling.
6. Restoration to active duties as housekeeper and mother of the family.

No medicine was given after the food treatment, save Hoffmann's anodyne when she had palpitation of the heart and suffocation of breath.

When we state that this case is here to-day, we think our hearers will admit that we have a living argument that we cannot ignore, as to the curability of chronically diseased tissues.

As the time is short we will give no more histories, and proceed to the closing section of this contribution, to wit:

STATEMENT OF PRINCIPLES OF THERAPEUTICS.

1. All cases of serious chronic disease which come under our care are commonly placed on a rigid diet of beef taken from the top of the round, freed either by hand or by the use of the American or Enterprise choppers from all fat and connective tissue. The resultant is the pure lean muscular fibre, which is moulded by the use of knife and fork and broiled, served to the patient on a hot water plate and seasoned with pepper, butter and salt. In some cases, especially of fatty degeneration, butter not allowed. Too much care cannot be given in the selection of the beef and in its preparation, and we refer you to the No. 2 in bibliography appended for further directions. Besides the beef, clear tea and coffee are allowed. As relishes, Worcestershire sauce, lemon and celery can be taken.

Beef is selected as a prime feeder, as it has been proved by long experience and observation to be the easiest digested, the soonest digested, and when digested, an aliment which nourishes all the organs and tissues, as it contains all of the chemical elements of the body.

In some cases, as has been noted, even beef freed from the connective fibrous tissue could not be used, and recourse was had to beef extracts or beef tea. At present we prefer Johnston's beef extract, but gladly note that other preparations are being pushed to the point of the "best." The great fault of many of the "extracts" now made is the presence of the glue or fibrous tissues, which ferment.

2. All starches and sugars are excluded from the rigid diet, as they contain only carbon, hydrogen and oxygen, are hard of digestion, and ferment into carbonic acid gas, alcohol and water, and if time is given into vinegar. It is our experience and that of others that these fermentative changes are highly damaging to the body tissues and have a great deal to do with the causation of chronically diseased organs. But this is not a paper on etiology. Those that wish for more information may get it by studying the articles as enumerated in the bibliography appended.

3. As the patient improves other foods may be brought gradually into the diet. Perhaps the first principle of dietetics is: the fewer articles of food eaten, the better. Nerve force in digestion is thereby saved. In these days of hard work and too fast living, the busy man can do well if he eats but one meat and one vegetable at a meal. If he has plenty of time to use in idleness that is another matter; then he may live to eat and vegetate while doing so.

4. Attention must be paid to that great gland, *the skin*, by giving the whole body daily a sponge bath of ammonia and water, and once a week a soap and water bath.

5. Passive exercise by rubbing and massage must be daily taken. A great amount of force can be placed in a sick person by the rubbing of him or her by a strong, composed, healthy man or woman. The well person may place one hand on the forehead and the other on the ankle or thigh of the sick one. When the patient is improving, he may receive strength by riding on a barebacked horse. Still later on active exercise must be taken, as walking.

Riding in an easy carriage must also be used as a means of passive exercise.

6. The patient's underclothing should be changed night and morning, and care must be taken by the physician to see that the patient is clad warmly enough. Some people do not know what is the proper amount of clothes to wear.

7. *The morale of the patient must be attended to.* We are often asked, "How do you make your patients eat beef? I cannot make mine." The reply is simply, "We make them." Those that come to us are usually sick enough to care to do most anything to get well. Indeed, they have been discouraged by the advice of friends and others that they could not be cured. Giving such a one the history of those that have been cured, even more diseased than himself, and telling him that he is sick with a disease that has been commonly called incurable, that it is curable, and that if he will join hands with us and work together for the desired end, then if the case consents, good can be accomplished. It is never right to say that you are going to surely cure any patient; we are finite; death is certain. Instead let him know of his desperate condition *and* what his chances are. A case of chronic disease should go on treatment for from six months to two years. He should pay by the month and in advance. This ensures better work on the part of the patient, as he wants his money's worth.

Morphological examinations of blood, sputum, fæces and urine, combined with the chemical tests, must be made three or four times a week. The urine must be brought to flowing at a specific gravity of 1014–1020, free from odor, bile or deposits on cooling.

If the patient deviates from his diet, or overworks, or worries, or plays too hard, the results will be seen in the urine. The fæces will indicate to the practitioner whether the food is well digested or not, and whether the patient is living to the plans or not. If the sick one becomes depressed, then is the time for the physician to carry him over the slough of despond.

8. *Medicines so-called.* With medicines alone, and the patient eating recklessly and living imprudently, no case of chronic disease may be expected to be cured. With no medicine, and with

careful attention to the diet and mode of life, chronic disease can be cured. But combining the greatest and best knowledge of foods, drugs and modes of life with a thorough information of the human body in health and disease, so that one can tell whether the case is improving or not—we say, combine these things with good hard common sense, go at the case with all the force and energy you have to cure, and we will predict that you will be agreeably disappointed by restoring a larger percentage to health than has been your ordinary practice.

When the heart is weak and beating fast, do not give antipyrin or caffein to depress it, but build up the system and tone the heart's action with salicin, strychnine, strophanthin or digitalin; salicin may be taken *ad libitum*. A non-sugary pepsin and pancreatin preparation is usually indicated.

A combination of the non-poisonous fluid extracts may be well used. Biniodide of mercury $\frac{1}{16}$ gr. may be given without fear of salivation.

The English iodide of potash for gravel of the lungs, blood and kidneys, in small doses, is well prescribed.

Give no medicines that effervesce or have sugar in them. If you think this is *idle talk*, after getting a patient into good running order, with every gland doing its work easily and well, and nature has been allowed a chance to lay down healthy tissues in the place of the unhealthy, give that patient a little sugar in his tea or coffee, or prescribe Fellows' syrup of hypophosphites, or let him drink of some of the effervescing mixtures, and you will find as we have found, that your case will be upset and good work undone.

Finally, as a cheap and easily obtained medicine, the taking of which forms no bad habits and which is at times more valuable than all drugs put together, we recommend the drinking of one pint of hot water at a temperature of from 100° to 150°, one hour before meals and on retiring. Such drinking dissolves concretions, washes out the stomach, liver, kidneys and bladder, and will lubricate the rusty, creaking machine.

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A PENAL RULE OF OUR COMMON SCHOOLS, AND SOME OF ITS EFFECTS.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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"Deliver me from the oppression of man."—*Ps. 119 134.*

"'Tis granted, and no plainer truth appears,
Our most important are our earliest years:
The mind, impressible and soft, with ease
Imbibes and copies what she hears and sees,
And through life's labyrinth holds fast the clue
That education gives her, false or true."

—*Cowper.*

Oppression in any form, at any age of human life, and under all circumstances, is revolting to a true American; but when it tends to lower the morals and compromise the health, then it partakes of tyranny, and this forces open rebellion. Oppression begets oppressors, and freedom makes freemen. Rules and laws are necessary to govern and control the unruly, but even when applied to the worst criminals tyranny is revolting to the finer feelings of mankind.

The last two years has brought under my personal observation the practical effects of a *penal rule* that has been, and is, in force in our *common schools*, the tendency of which is to lower the morals, encourage filthy habits and, sooner or later, compromise the health, as well as to endanger the lives of the scholars.

As I desire to be charitable to all mankind, I impute the existence and enforcement of said rule to ignorance, and not to wickedness of the teacher's heart. But this does not lessen the objections or dangers, or free the teachers from a just criticism. The best methods of lighting, heating, ventilating, with probably everything else relating to the hygiene of our common schools, have been discussed by the philanthropists of our country from its birth to the present. Town, city, county, State and national educational societies have probably weighed every phase of the subject as to the best method of teaching and governing the schools of our country.

The above being admitted, it may appear to the superficial thinker in and out of the teaching clan that I am stepping upon slippery ground, or attempting more than duty demands. Of one thing rest assured, I will not deal in supparasitation, as the subject is of too serious a nature to those who are defenseless, as against those who should know better. Four cases have come directly under my observation the past winter; two of them resulted in filthy and wet clothing; the other two were not so fortunate as to stop at this point—in fact the symptoms in one of the latter were of a serious character. In getting the history of the two last I found that our school teachers had the following *penal rule*, viz: "All

children going out in time of the school session were kept in one-third of the recess." This would deduct five minutes from the fifteen, the latter being the full time for recess. It is certainly well known to all those that came up through childhood that a penalty like this, when applied to small children in particular, is, to state it mildly, wrong. They want their play-time with their fellows, and that they may obtain it, will suffer greatly.

Man, to have his fancied pleasures of an ephemeral character that will bring him pain on the morrow, will even risk the loss of eternal happiness, better stated by the poet:

> "It is sad
> To think how few our pleasures really are,
> And for the which we risk eternal good."

It is a common saying that cleanliness is next to godliness. Admit this as a truth, then children with their clothing soiled by their urine or fæces are a long distance from godliness. Youth is the time to get fixed habits; as some philosopher has stated it, "As the twig is bent, so the tree inclines." It goes as a saying that habit is second nature, as is demonstrated in the filthy habits of those who use tobacco. When they first commenced the use of the weed it sickened, vomited and made the person dizzy; but by persisting against its warnings the system tolerates, and finally appears to demand it, so that it gives mental and imaginary physical pain to do without it; as in this habit, so in others. The calls or promptings of nature should be responded to immediately; these are facts that cannot be controverted by any intelligent mind, the force of which to the educated physician is so self-evident that the above penal rule in our common schools strikes him as inhuman.

In clinically studying the causes of constipation and costiveness I find two leading factors: 1. Constipation is more often found in the female. 2. That it dates from youth. Here again we have another example that we are creatures of habit, as I have had my patients to frankly inform me that, when young, they were prevented from attending to the warnings of nature by reason of company or other surrounding circumstance, until the habit was formed; here false modesty was to blame. Only a few days ago I was consulted by a lady who informed me that she rarely had a passage from her bowels oftener than once a week, and she was then suffering from fæcal toxæmia, *e. g.*, headache, dizziness, bad taste, stupor, drowsiness, low spirits, etc. In causation of her constipation it was the same old tale, "false modesty when a youth." This is only one of the many that could be given. Medical men know that urine retained any considerable length of time in the bladder becomes alkaline. This is abnormal, although it is frequently alkaline shortly after meals, which may account for the desire to urinate frequently after eating, or the converse. Unhealthy urine in the bladder first acts as a local irritant upon the coats; continuing to accumulate, it distends the bladder to the extent that the muscular contractility is destroyed, the further flow from the ureters and kidneys prevented, and, by the pressure of the over-distended bladder, contiguous organs interfered with in action and compromised by displacement, *e. g.*, cystitis first, and inflammation of continuous and contiguous parts, uræmic toxæmia, calculi, saculation of the walls of the bladder, etc. The child, to have its play-time, will resist the calls of nature to the uttermost. In time this will weaken and then paralyze the bladder and bowels, and the habit, once formed, is very difficult to overcome. This will in a measure account for many of our cases of headache and general bad feeling, malaise, or, popularly called, blues, that so often afflict some persons.

In some temperaments it will prove a greater source of annoyance than in others, as the bilious temperament would suffer more from the interference with the bowels, while the nervous temperament would be more often affected by interference with the action of the bladder; both would make pessimists and melancholics, particularly the first-named.

The human system will not tolerate any interference with her laws without rebelling, and the retention of excrementitial substances for any unreasonable length of time first works a local and then a general injury, as they not only become foreign substances, but general poisons, and the parts and system become correspondingly injured The child resists the calls of nature from day to day as long as possible, by reason of the penalty, and he finally accomplishes the feat, or the discharges pass off into his clothing; the latter is likely to get the child a scolding, if not a whipping, when he returns home. This is altogether wrong; if any one deserves the punishment, it is certainly the teacher. The home punishment adds fuel to the flame by forcing the child to bring more will-power to bear in resisting nature's demands, and in succeeding he soils the inside. Again habit becomes second nature. What to the child was at first filth, at which his higher susceptibilities or moral nature revolted, becomes in time a matter of course, or don't care. If cleanliness of person is part of the moral code, then the person's morals are lowered. Moral is derived from the Latin *moralis*, from *mos*, *moris*, manner, custom, habit, way of life, conduct.

I do not deny the teachers the right—in fact I believe it to be their duty—to adopt rules to govern their schools, but I do deny them the right to adopt any rule that leads to filthy habits, or that is likely to entail disease, ever so remotely, upon their scholars. It has been my province to meet with many children who were afflicted with

an irresistible desire to urinate every little while, the irritant residing within the bladder, probably acrid urine, or without the bladder by reflex or sympathetic action from the fæces or worms, etc. To compel such children to obey such a rule is brutal. The rule itself goes for naught; it is the penalty that does the mischief, as it is this that causes the child to resist nature's calls until the damage has been accomplished. To rob the little one of five minutes of his play-time is a calamity to him that will cause him to endure considerable physical suffering. One of our learned Supreme Judges of the United States Supreme Court declared, a short time ago, that we had "too many laws." If this is true of our country, it is also undoubtedly true when applied to our common schools, one that I am certain of that should never have had more than a passing thought, like the flitting of a butterfly through the air, to condemn it. If tyranny makes tyrants, this penal rule adds other factors, such as filthy bodies without and within, also sowing the seeds of disease sooner or later. Discipline in the government of our schools is one thing, and inhumanity is another.

The overfilling of the bladder or excessive distention of the bowels will, in the female, tend to develop versions, prolapses and obliquities of the uterus, vesicoceles and rectoceles, and in the male and female alike, hæmorrhoids, etc. A simple allusion, to the educated physician, to the probabilities and possibilities of the derangements that might result directly and indirectly, is all that is necessary; therefore I shall not name all.

A. A., a boy aged 8 years, returned from school suffering with pain in the region of his bladder and lower bowel, and informed his mother that the teacher would not permit him to go out to the water-closet, although he had asked it. I was summoned to the case at once, and upon carefully interrogating the little fellow he reiterated his statements as made to his mother, with this additional declaration, that the teacher finally told him, after repeatedly asking her for permission to go out and informing her why he wanted to, that he might go, but that he would lose recess and would have to stay in. To him five minutes meant the entire time and he resisted nature's call until recess was given; then he went home, suffering as stated. His parents were very angry, and they could hardly be induced to send their child again to school, even after his recovery.

Laura P., aged about 10 years, large for her age and fleshy. She reported that she requested the teacher, immediately after the morning session (9 A. M.) opened, to let her go to the water-closet, but was refused. Shortly after a severe pain attacked her in the region of her bladder, that forced her to cry. She reported to me and to her parents that she repeatedly asked to go out, but was denied, and was forced to remain in until noon. Her sufferings were so great that I was summoned immediately upon her return home. I found her complaining of great pain in and over the region of the bladder, crying and very nervous. She informed me that she had not passed any urine since early morning, and was not certain that she had that day. Over the region of the bladder she was remarkably tender, pulse 120, small, sharp and hard. Her countenance gave evidence of great suffering. She was quite nervous and could not tolerate the least pressure over the lower part of her abdomen. This case was confined to bed several days, but finally appeared to make a full and complete recovery.

The following case occurred to Dr. H. R. Guthrie, and he kindly furnished me the following synopsis: L. F., aged 8 years. Nervous temperament, which was severely excited from not being allowed, by the rules of the school, to go to the water-closet to answer the calls of nature; had an irritable bladder. When called to see her, found her threatened with spasms. Her nervous system was disturbed for a number of days, until, in fact, the bladder regained its accustomed tone. The same condition has shown itself two or three times, but less severely.

Prof. J. A. Larrabee, of Louisville, Ky., says in one of his articles[1] on diseases of the school-room: "One-third of the lives of the American people is passed in the schools, and this third is the time when the physical system is peculiarly disposed to contract disease." This being granted, then the preventive and preservative laws of health should not only be studied by the teacher and scholar alike (age and capacity considered), but should be daily practiced. Where the child is too young to understand the force of language, apply the Kindergarten method, so as to simplify and practically apply the object lessons. No rule should ever be adopted that will have the least tendency to impair the physical or moral health of the child, remembering that healthy adults presupposes healthy children. The school-house and everything pertaining to it, within, without and around and about it, should be as inviting to the mind and as salubrious to the body as possible, that health of the body and mind shall be improved, keeping the body at all times and under all circumstances in advance of the mind; and I fully agree with Prof. Larrabee that medical inspectors should be appointed and have entire control of our public schools in everything that relates to the health of the scholars.

The argument adduced in favor of this *penal* rule is, that without this penalty small children will make the calls of nature a pretext to run out-of-doors to play, and the penalty, in a great measure, prevents this.

[1] Boston Herald.

This is undoubtedly a very lame argument to bring forward in favor of such an inhuman rule. Better let them run out and play and work off some of the surplus steam, exercise their muscles and get fresh air; they no doubt need it; the system calls for it, and should be allowed to have it. After having it they will return to the schoolroom refreshed, and my word for it, they will make better adults, physically and mentally. Rigid discipline and the best method of cramming the child with the *crudities* of *book-knowledge* is placed paramount to everything else—the body not given more than a passing thought with some of our teachers. The Roman mother first educated her child how to develop the body, making the mind of secondary importance; while we of our day force the mind and let the body take care of itself. Many of our teachers pander to the foolish vanity of the parents by crowding and cramming the mind, to enable the parents to boast of the wonderful precocity of their children, that they have the smartest children in their classes, and, if possible, in the school, as cases of this kind have come under my observation. When these wise children are fully weighed, two things are found to exist: an impaired body and the knowledge of the monkey and parrot, that will serve and prove of little value in the race of life or bread-making. They are without individuality, originality or true mental capacity; to my finite mind this is not education. Did you ever know of any one so crowded and crammed with the crudities of our school-books who ever made any great mark in the world's history, if they lived long enough to have a fair and full trial? They more often die prematurely, as they have sapped and drained the vital vigor that they possessed when they commenced to attend school, growth of body and mental labor preventing any surplus from being stored up for future use. It is about time that medical men should cry out with a loud voice against this and every other evil that endangers the purity of the body, as well as its health. God, the family, society and the State demand it, as you cannot have good, sound and active minds in other than good, sound bodies.

The following excerpts were clipped from the *Daily Globe-Democrat*, St. Louis, Mo., and as they are germane to the subject under discussion I beg permission to present and read them in connection with and as part of this paper:

"WILLIE BERMEL'S DEATH.—PECULIAR AND PATHETIC FACTS OF IMPORTANCE TO SCHOOL TEACHERS.—The death of Willie J. Bermel, aged 6 years and 6 months, by cerebral meningitis, Sunday evening at the home of his parents, 824 Soulard street, according to the general circumstances attending the case, is attended with a great deal of interest to parents having children in the public schools.

"The story, as told by the parents, Mr. and Mrs. John Bermel, and their neighbors, is pathetic, though startling in a degree. They say: 'Willie was sent to room No. 17 of the Carroll school, Tenth and Carroll streets. He was in the best of health, possibly excepting an ailment quite incident to childhood, and which necessitated his leaving the schoolroom more frequently than were he not so afflicted. On a few occasions, however, the teacher refused him leave. In consequence he was a victim of physiological necessities. As he had some distance to walk home and the weather was cold, a spell of sickness resulted. That was four weeks since. Dr. John E. Faber was called in. Willie recovered shortly. The doctor gave emphatic orders that under no circumstances should Willie be retained in school when he requested a few minutes' absence. Word was transmitted to the teacher in accordance, but a number of times he was detained. Last Wednesday, when it was cold, he returned with his clothes frozen. He was chilled through. We warmed him and put on dry clothing. Then he grew sick and was tucked in bed. He fell into a state of semi-consciousness in a few hours. His sufferings grew fearful. He would almost continually raise his little hand, and snapping his fingers, schoolboy fashion, would plead so hard, 'O, I must go out—I can't help it—please let me go.' This plea, repeated again and again, was the sole burden of his mind; but Sunday morning he grew weaker and his pleading fainter and fainter, until he sank into death with his lips forming with his last breath the faint request, 'let me go out.'"

"Dr. Faber was seen by the reporter and said: 'I am not quite certain whether it is a case of cerebral meningitis or cerebro-spinal meningitis, but think it was the former. Whichever it was, it was primarily induced by congestion, due to undue retention by delicate organs, as these cases always are. When I went to attend the boy last week I found him suffering from congestive symptoms. He was not then out of his mind, but he soon fell into a comatose condition. I saw that there were febrile traces, but gave no quinine, as there was no use trying to do other than keep him quiet. I had attended him a few weeks previous. Then he was suffering from congestive symptoms and I treated him for cerebral congestion, giving him a dose of calomel. The parents told me of the trouble at school, and I gave imperative instructions that under no consideration should he be refused perfect liberty. Whether they did refuse, I do not know more than what the parents told me. I can not say positively that confining him in school unduly was the cause of his death. I would hesitate to say if I did, because I would be loath to single out any one teacher to be publicly attacked. But one thing I will say is that I have a great many simi-

lar cases produced by that error that is allowed to be practiced in public schools. All these cases you hear of of death by cerebral troubles among children are due to the practice of trying to discipline a child's nature beyond reason. The great trouble is that the majority of our teachers are young women, who are determined to blindly preserve discipline. They neither use judgment, nor could they determine. It is a great argument against employing the feminine sex in that capacity. The practice is brutal, but it is general throughout the city. Discipline is well, but discipline had better have been thrown overboard altogether than that even one human life should have been lost. Death in this case, it is possible, may have resulted from something else—high feeding incident to Christmas. I should not care to absolutely attribute it to the most probable cause.'

"The neighbors of the afflicted family corroborate their statements in full, and complain loudly that their own children are compelled to suffer similarly. On the morning when it is said Willie contracted his fatal cold they state that recess had been abolished, and still the child was refused egress.

"Dr. Faber hesitated somewhat in granting a death certificate, but was counseled by a colleague that it would be impossible to arrive at the cause of death, even by autopsy, and the permit was granted. An effort was made to see the teacher concerned last night, but was futile, owing to the lateness of the hour."

Willie Bermel evidently died from *uræmic poisoning*, the result of this same penal rule. Dr. Faber is trying to carry water on both shoulders. His intention is to screen the teacher, and in doing so he places himself in an unenviable position with those who fully understand all the facts.

"PUBLIC SCHOOL DISCIPLINE.—A MOTHER AND EX-TEACHER SAYS IT IS BRUTAL AND SUGGESTS A REMEDY.—The pathetic circumstances attending the death of little Willie Bermel recalls some experiences in my own life that may not be uninteresting, but I would first make the observation, founded upon my own experiences as a mother and an earnest student of child nature, that the present system of discipline in the public schools is not only unreasonable, but inhuman. There are many teachers in the public schools who have no right to be there; they 'despise children.' I have heard them say it. They have no sympathy for them and no understanding of their dispositions and natures. I maintain that love is the only disciplinarian, and a teacher who can not govern her pupils through its influence should have nothing to do with children. The absurdity of trying to control several hundred children of varying dispositions and temperaments by one iron method is too palpable for dispute.

"Several years ago I taught a boys' class in a male academy. The principal was a kind man, and earnestly strove to win the affections of his pupils, but he said, 'Now, I'm afraid you will find these boys refractory; my former lady teachers complained of them, and they were compelled to use the strictest discipline. One especially—mentioning his name—has given a great deal of trouble, and is perfectly irrepressible.' 'I will undertake them,' I replied, 'if you will kindly allow me to carry out my own ideas of discipline'—to which he assented.

"After the first day I had no trouble. I made companions, friends of my boys. I entered into their little pleasures and pursuits with interest, for I loved them and was proud of them, and I never had cause to regret my undertaking. My 'irrepressible' was a bright, intelligent boy of 12 years, nervous, restless, and with a keen inquiring mind. My prescription for him was simply, 'Charlie, I see that you want an escape valve: now go out in the yard and walk up and down briskly as many times as you are years old; that will be twelve; then come in, and I think you will be able to study.' My prescription never failed; he needed some outlet for his overflowing vital forces, and the walk furnished it. He was the brightest, dearest boy in my class, fun-loving, as all boys are and ought to be, but loving, manly and true, and he never gave me a moment's vexation. A few years later, having left the academy, I tried to get a situation to teach in the public schools, because it was the work I loved and wanted to do, but failed because I had been educated in a Baltimore seminary, from which I graduated with honor, and because I had not 'gone through' the Normal School in St. Louis. Red tape proscribed me, and the field I longed to enter was reserved for a young, inexperienced girl, who felt 'children a bore,' and only taught for the money. Over her scholastic capacity I draw the veil of charity. It made no difference; she had friends with 'inflooence' on the School Board, and the way for her was open. I would here add that if I were offered now a situation to teach in the public schools I should decline it under the present system of tyrannous discipline, which I consider an outrage upon the rights of helpless children and subversive of the very ends sought to be attained. I went through the same exasperating ordeal when my own little ones went to school, and I believe that half the weaknesses and ailments of children are due to that restriction. I shall have all the public school teachers about my ears for writing this, to say nothing of the indignation of the august and sacred 'board,' but I don't care; it is the truth, as many mothers can testify. When women are chosen for teachers who understand and love children, who have kindly natures and affectionate hearts, then the high and mighty potentates

who inaugurated and maintain the present system of discipline will find fewer thorns in their tutelary path, and give more satisfaction to the tax-paying parents who support the educational institutions. A LOVER OF CHILDREN."

This lady, signed "A Lover of Children," makes some happy hits. In the matter of employing teachers, too often teachers are employed who are physical wrecks, this being done from a charitable standpoint. I have known teachers in our common schools who were expectorating large quantities of tubercle every day—spit it upon the floor to dry, of course, and, when dry, to be driven into the air of the schoolroom by every movement of the scholars and every puff of the air. Teachers should be sound in body and mind, and should be employed because they love the work and love children.

COUGH IN ITS RELATIONS TO MORBID STATES OF THE NASAL PASSAGES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. E. SCHADLE, M.D.,
OF ST. PAUL, MINN.

The syptomatology of morbid processes seldom presents a more perplexing subject for analysis as to its primary cause than that of cough. A chronic cough which will not yield to ordinary methods of treatment and whose ultimate significance is sometimes difficult to understand, is calculated as much as any other single condition to establish in the mind of the sufferer extreme anxiety. This is not strange when it is remembered that we have in it one of the premonitory symptoms of consumption.

It is only from a comprehensive knowledge of all its pathological connections that reliable differentiations can be made in consideration of the primary sources of cough. The peculiar phenomenal sounds characterizing some varieties of cough may aid materially in determining the nature and location of the disease on which its origin depends; but a correct diagnosis from such a basis of investigation cannot always be relied upon; a more extensive research is required.

A series of observations, strengthened by those of other laryngologists, confirms me in the conviction that not enough attention is given to interrogations of the nasal passages when cases of cough present themselves. An important interest belongs to this subject, especially in its practical relations to morbid states of the nasal cavities.

Teachers of rational medicine seem to lose sight of the essential office of the nose as it presides over the act of respiration and that an abnormality of its structures may either directly or sympathetically interrupt the physiological processes of the organs which come under its domain. Experience bears me out in the statement that in conditions where specific organic changes of the lungs are not manifest, a cough spasmodic in character, accompanied or not by temporary alterations of the voice or of the function of respiration, is frequently, if not invariably, of nasal origin. To practically demonstrate the importance of this statement, I will state the histories of several cases which certainly possess the average amount of interest.

Case 1.—Cough due to posterior hypertrophies of the inferior turbinated bones.

F, a young woman, eighteen years of age, came to me ten months ago, for advice concerning a distressing cough which had been troubling her for more than nine years. She stated that during this time all sorts of cough mixtures had been prescribed by different physicians but without affording her permanent relief. The cough was paroxysmal and varied but little during any part of the year. If anything exerted an influence, she thought it was a moist condition of the atmosphere as at such times the seizures were harder and more prolonged. Unattended by expectorations the cough was dry and irritative and came on most intensely at the hours of retiring and rising, particularly the former. Sometimes after assuming the recumbent posture it became more severe, the attacks usually lasting an hour or more. The voice, especially in the evenings, was hoarse.

As to the subjective features of her complaint, she directed my attention to the laryngo-bronchial region where the sensation giving rise to the cough was located. It was a feeling of pronounced irritation resembling very much that prodnced by the presence of a foreign body requiring expulsion from these parts. In connection with this expression of the disorder, a stopped-up feeling of the nasal chambers was complained of as producing considerable discomfort.

Noticeable among other symptoms was a choreaform disturbance of some of the muscles of the face, which became more pronounced in their convulsive movements under the influence of fear, such as is occasionally created by the presence of surgical instruments used in an examination. The neurotic diathesis evidently was inherited from the father who was himself afflicted with nervous irritability, shown by his uncommon susceptibility to influences peculiar to such a condition. An undue amount of hyperæsthesia was present in the parts as was indicated by sneezing and coughing when pressure was exerted by the operating instrument.

The entire intra-nasal mucous lining was catarrhally affected. It was intensely red and threw off great quantities of serous fluid, thus occasioning a troublesome symptom. The mucous membrane was also very sensitive to the action of local causes of irritation. The use of a probe

over its surface soon was followed by so-called erectile swellings of the parts touched.

Posterior inspection of the nasal fossæ revealed neoplastic changes of the inferior turbinated bones. The redundant tissue which occupied about one-third of the length of each bone consisted of soft, irregularly shaped growths, the size of an ordinary mulberry. The lumen of the lower meatus was considerably lessened by the condition. The larynx presented no abnormal changes apart from a deep redness and marked infiltration of the subglottic mucous membrane, which condition was limited to this region. Applications of a solution of chloride of zinc to the affected subglottic tissues and a correction of the deformed septum with a Bosworth saw soon yielded entire relief.

The sensitive nervous organization of the patient and the marked morbid changes discovered in the nasal chambers, furnished a clew to the cause of the cough.

The posterior hypertrophies were removed with a snare and the rhinal inflammation reduced by the use simply of antiseptic sprays. To overcome the nervous excitability, the remedies —arsenic, zinc, quinine and strychnine were employed. Under the above management the cough soon disappeared and has remained so ever since.

Case 2.—Cough due to a deformity of the septum narium.

During the autumn of 1888, a man, forty-three years of age, was sent to me for examination on account of a cough which, he said, fifteen years before had come on without an apparent reason, and which year by year had gradually grown worse. He gave no evidences of tubercular disease either by his own or that of his family history. Generally he was in the enjoyment of good health and regularly followed his vocation as an accountant for a railroad corporation. The cough was spasmodic and often quite violent. Fatigue and active physical exercise had a tendency to bring on the attacks. Unlike the case just cited he was never troubled with the cough after having retired for the night. Usually in the mornings whilst in the act of dressing himself he had a seizure. One of the initial symptoms of a paroxysm was the sensation of a worm crawling through the tissues of the larynx. He also complained of occlusion of the left nostril, which on examination was found to contain a tumor of the septum narium consisting of cartilage and bone. The right nasal chamber, the post-nasal space and the pharynx did not seem to suffer from the obstructed state of the left side of the nose as is commonly the case under such circumstances. Aside from this, the family history contained nothing of special importance.

An examination of the larynx showed thickening of the mucous membrane of the interarytenoid space. The aro and naso-pharyngeal mucous membrane was but slightly altered in its normal appearances. A few chronically enlarged follicles surrounded here and there by hyperæmic patches were observable.

Case 3.—Cough due to chronic nasal catarrh occurring in a subject predisposed to consumption. About one year ago a woman, 25 years of age, medium size, light complexion, came to me through the advice of her medical attendant, complaining of a harassing cough which began six months previously. The cough was accompanied by muco-purulent expectorations. Decided anæmia and loss of flesh were showing themselves; the appetite was poor, the bowels irregular and the menstrual function deranged. In connection with the symptoms of cough she also complained of an excessive chronic discharge from the nasal passages, which had been troubling her for a few months prior to the onset of the cough. The cause of the rhinal disorder she attributed to a neglected cold in the head. The family history was very discouraging, as she stated that one parent and several sisters had died from tubercular disease. A physical examination of the chest gave no evidence of a coexisting lung disease. By the use of the laryngoscope a catarrhal change of the larynx, such as is sometimes initiative of tubercular laryngitis, was discovered. The mucous membrane was hyperæmic; the arytenoid cartilages were swollen and intensely red; the vocal bands sympathized but little with the morbid process; beyond them in the trachea no change of structure was perceptible; the voice was impaired in both quality and strength; some pain was experienced on swallowing water or food. The rhinoscope brought to light a well-seated chronic rhinal inflammation involving the whole membrane covering the intra-nasal fossæ. The mucous membrane was purple-red and swollen, and was actively engaged in throwing off the offensive secretions of which mention has been made. Whilst a quantity of purulent material was blown from the nose, much of it found its way into the throat from behind the palate. It at first seemed as though the patient was suffering from laryngeal phthisis, an opinion entertained by her former physician; but as there were no signs indicating pulmonary trouble, it appeared clear that the cough and laryngitis were secondary elements in the case; they were a consequence of the pre-existing catarrhal disease of the nasal passages.

The treatment pursued with a view to eradicate the cough consisted in an attempt to remove the catarrhal affection of the nose and throat, and to tone up the general system of the patient. The former end was accomplished by the local applications of antiseptic and alterative agents, the latter by the administration of the syrup of the iodide of iron in full doses. As soon as an impression both locally and constitutionally was made the cough ceased.

Repeated observations on the peculiar behavior of nasal disorders add testimony to the fact that those diseases of the nose which predispose to the establishment of reflex disturbances are the morbid processes which give rise to cough when it is thus pathologically related.

A study of reflex neuroses during recent years has developed a fertile field for the investigation of not a few phenomenal symptoms of disease whose etiology hitherto remained obscure. It is nowadays a conclusive observation that with a knowledge of nasal reflexes in their pathological aspects a way has been opened for a better understanding of the cause and treatment of a certain form of so-called nervous headache. An inquiry into the state of the nose not infrequently reveals a contributory factor to the production of spasmodic asthma, whose cure becomes expedient by a removal of the nasal difficulty.

The extraordinary reflex symptoms of hay fever which give character to the affection, it is now well known, have their focus of origin seated in a morbid state of the intra-nasal cavities. Local choreaform movements of the muscles of the soft palate, of the face, or of the larynx, are sometimes traceable to intra-nasal irritation.

The "pathological nasal reflexes" described by Dr. John N. Mackenzie are thus seen to have a special importance attached to themselves, which I am sure should merit the attention of all intelligent physicians. To this category belongs a spasmodic cough whose cause is located in a morbid state of the nasal passages, and whose existence remains permanent until the intra-nasal lesion is got rid of.

Through the sympathetic nervous influence exerted by the presence of diseases of the cavities of the nose more or less irritation of the peripheral nervous filaments of the laryngo-bronchial mucous membrane takes place, whereby cough is induced.

"Recurrent laryngitis" attended by cough Dr. Ingalls attributes to a coexisting nasal catarrh or obstruction, and maintains that a cure is performed by giving proper attention to the treatment of the nasal passages.

In the classical writings of Dr. John N. Mackenzie we find it said that "various neuralgic conditions of the branches of the fifth and other nerves —cough, asthma, vertigo, nightmare, diseased states of the eye, ear, larynx and bronchial tubes —have been mitigated or known to disappear with a cure of the nasal affection."

Paresis of the vaso-motor blood-vessels of the nasal mucous membrane, resulting from neglected attacks of acute rhinitis or local irritation from a deformed septum or morbid growth plays unquestionably a conspicuous part in bringing about secondary effects of the larynx or bronchial tubes accompanied with cough and other serious consequences.

Referring to this subject a few years ago, Dr. Bosworth said: "We often regard a laryngitis and bronchitis as the extension of a catarrhal process from the nasal membrane. That such is the case I do not believe. There is no continuity of tissue. That this is the true view is well shown by the fact of our utter failure for many years to treat successfully catarrhal disease in the larynx and trachea by local application, and by our striking success in curing such diseases by removing diseased conditions in the nose, to the exclusion of any local measures whatever directed to the passages below." Further on he says: "Vaso-motor paresis of the blood-vessels of the nose constituting inflammation is liable to be followed by vaso-motor paresis in the larynx, trachea and bronchi."

The treatment of a chronic cough dependent on intra-nasal disease at once becomes apparent. By following the precepts of the quotation from remarks of the President of this Section, "that the laryngologist of the future must be more the rhinologist, and the rhinologist more the surgeon than the physician," a correct method of treatment of this symptom, as it occurs in connection with morbid states of the nasal passages, is usually afforded.

EFFECT OF NATURAL GAS UPON UPPER AIR PASSAGES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY D. M. RANKIN, A.M., M.D.,
OF ALLEGHENY, PA.

In 1883, when natural gas was first introduced into Pittsburgh as a fuel, loud and many were the complaints that the heat it produced had the effect of making the atmosphere too dry for breathing purposes (not taking into consideration this new and untamed fluid, as to its noxious and combustible qualities) that it irritated the nose and throat.

So great was the complaint at first that a great many persons had it removed from their dwelling houses, but ingenuity often conquers a great many difficulties, and it certainly did in this case. The dryness of the atmosphere produced by the heat of the gas was obviated by kettles filled with water, hung over the fireplaces in which the gas was burning, the water in the kettles would become sufficiently heated to generate steam enough to neutralize the dryness produced by combustion of the natural gas. This dryness of the atmosphere was not an imaginary thing, because even after burning the natural gas in an open grate for a few minutes, the cracking and opening of the glued joints of the furniture of that room could be distinctly heard and seen. Before the plan of moistening the air was introduced, a large amount of the finest and most expensive furniture, such

as pianos, parlor, bedroom and dining room furniture was entirely ruined. This natural gas is a great godsend to the cities and towns that are fortunate enough to be within piping distance of the gas wells. For a long time it burned before it was utilized, but finally our great manufacturers saw it was intended for some good purpose, and began piping it to their mills.

It has superseded coal and is now principally used in all the manufactories, business houses and dwellings. Aside from the comfort natural gas gives at the fireside, aside from the labor it saves in our mills and glass houses, it serves to illuminate our streets, and gives us additional light which no other city in the world possesses. There is no more danger in using it than there is in the illuminating gas that has been used for a century. I have been reliably informed by persons old enough to remember when gas for illuminating purposes was first introduced into Pittsburgh, that it was a long time before people became used to handling it; a great many explosions and loss of life occurred, but at the present time, especially in large cities, would we be willing to dispense with it?

When natural gas was introduced into Pittsburgh there were quite a number of explosions, and some of them very serious, resulting in great loss of life, doubtless caused by the fact that consumers did not know how to manage it as well as they do now. It was like coal oil when first introduced, people had to be educated to its use, and had to pay, oftentimes, very dearly for their education. As it is now managed we very seldom hear of an explosion, except when it is due to carelessness. Having these complaints frequently brought to my attention, I began to interest myself in the matter, and discovered that the occurrence of natural gas is by no means a recent discovery, it is mentioned as occurring among the Ancients, for instance, "the Holy Fires of Baku," also low pressure gas springs have been found in Germany, one of which at the salt works at Gottesgabe, on the Rhine, was utilized for illuminating purposes. In the United States gas wells were known to the earliest settlers, and have been in economic use for heating and illuminating since 1821. In this year the town of Fredonia, N. Y., utilized natural gas for illuminating purposes, and the results were so satisfactory that a second well was drilled in 1858, which furnished the supply for 200 burners.

While drilling for oil in Western Pennsylvania in the year 1859, small quantities of gas were always associated with the oil, and *vice versa*, gas was occasionally struck which contained petroleum. Among the most powerful gas wells struck in the vicinity of Pittsburgh was one at Murraysville, in 1878, at a depth of 400 feet, which was so powerful as to throw out the drilling implements and displace the derrick.

Until 1883 large quantities of this valuable agent was wasted, at this time dates the practical application of natural gas to manufacturing and domestic purposes. It was during this year that the great Westinghouse pipage company was formed to convey the gas from Murraysville wells to Pittsburgh. At present there are 1,200 miles of main pipe communicating with the gas wells, supplying consumers in mills, factories, houses, etc., of Pittsburgh and vicinity, to the extent of 600,000,000 cubic feet daily.

Different chemists, who have analyzed the natural gas, state that it is very variable. It will vary not only in different wells, but it will do so continuously in one and the same well. The following is the mean analysis taken from six different wells, by an eminent Pittsburgh chemist:

Marsh gas CH_4	67 per cent.
Hydrogen H	22 " "
Nitrogen N	3 " "
Ethylic hydride C_2H_6	5 " "
Olefiant gas C_2H_4	1 " "
Carbonib oxide CO_2	06 " "
Carbonus oxide CO	06 " "

By a glance at the above analysis one cannot doubt for a moment how impure and noxious the natural gas would be for breathing purposes. Upon examination of the cases suffering from the effects of breathing natural gas, and the changed condition of the atmosphere produced by its combustion brought to my notice, I discovered the following history: The patients usually complained first of a dryness of the nose and throat, followed by a free discharge of muco-purulent matter from those cavities, after which the dryness would recur, sometimes the irritation would extend to the larynx, and produce considerable huskiness of the voice. Upon examination of the nares, pharynx, and larynx with reflected light, a considerable amount of congestion would be observed, with extreme sensibility, which were promptly relieved by applications of four per cent. solution of cocaine, followed by application to the nares and pharynx of vaseline.

I should here state that three months after the first introduction of natural gas for domestic purposes there were no complaints; this can be readily accounted for. At first the plumbers and gas-fitters did not understand how to handle it. In the first place the pipes were made of metal too porous, the joints were not as tight as they should have been, the gas companies appointed inspectors to go to every place where gas was used, and test every pipe conveying natural gas, the result was they discovered that a large percentage of the pipes leaked, contaminating the atmosphere to such an extent as to cause the unpleasant symptoms to the upper air passages. Now we hear no complaints, and those persons who had the gas removed from their dwellings have, since the pipage has been perfected, had it replaced in their residences.

The following conclusions may be arrived at, with our present improved gas-fitting, and the experience our gas-fitters have acquired since its introduction. We may now feel perfectly safe from being asphyxiated by escaping gas, or any deleterious effects resulting from inhaling an atmosphere devoid of sufficient moisture to be conducive to a healthy respiration.

I am aware that a rumor has gone abroad (especially emanating from cities that have not the comforts we enjoy from this wonderful substance supplied us from the bowels of the earth in exhaustless quantities) that the natural gas is not healthy to breathe; it certainly is not, but in Pittsburgh we do not pretend to breathe it. We burn it, and enjoy it to its fullest extent, and expect to do so as long as it lasts.

ALEXANDER'S OPERATION, WITH A NEW METHOD FOR SECURING THE ROUND LIGAMENTS.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. B. CARPENTER, M.D.,
OF CLEVELAND, O.

It is my purpose, in appearing before the members of this Section, to speak briefly regarding the Alexander operation, with special reference to its application to complete prolapsus.

You are all familiar with the claims of Dr. Alexander, and also with the writings of Mundé and others on the subject; therefore, it would be only waste of time to enter into detail in describing the various steps of the operation; but I will confine myself principally to a few remarks regarding the fastening of the round ligaments.

As a radical cure for this most distressing condition I believe the Alexander operation has no equal because of the simplicity of the work and the comparative, yes, almost absolute freedom from mortality. It is true there have been deaths recorded as resulting directly from the operation; yet this occurred in the early time before the detail was well understood.

The greatest objections raised in the past against this method has been the difficulty in finding the round ligaments. This, however, applied chiefly to the operations for retroversion and retroflexion, where the ligaments were small and very fragile, breaking while being drawn out, and causing the operation to be abandoned as incomplete, and the surgeon to bear the blame of his work being a failure.

In cases of complete prolapsus it is entirely different. The ligaments have become thickened and greatly enlarged; the difficulty in finding them in most cases is entirely removed. The many years of constant dragging upon the ligaments usually resulted in a hypertrophied condition, so that, instead of being small and fragile, we find them of much greater proportions, so that, by first replacing the uterus and then having it held well up by a sound in its cavity, the ligaments can be carefully drawn out with little or no danger of their breaking.

In 1885 I had the pleasure of listening to a paper by Dr. Alexander himself, read before the British Gynecological Society, wherein he described his method of shortening the round ligaments, and I was particularly impressed with what seemed to me to be the insecurity of the fastenings.

If we turn to our anatomy for a moment and consider the structures involved, the dense unyielding fibers of the pillars of the external abdominal ring, at the same time the round, smooth character of the ligaments, composed, as they are, of dense fibrous tissue, thus affording a limited opportunity for the formation of strong adhesions in the wound, it seems to me that a reasonable explanation can be found why many of the patients who have been operated upon have reported themselves in after months as not improved, the anchorage being so slight and frail that the uterus, by continually dragging, tears the ligaments loose and gradually settles down to its old position. This, at least, was the explanation made to myself, and I accordingly determined to try a different method of fixation.

The plan which I now employ is as follows: The uterus being replaced and held high up by an assistant, the incisions are made and the ligaments on either side drawn out until the uterus is found to be well up and forward; a needle armed with silver wire, No. 26, is then passed through the external pillar of the ring, through the round ligament, then through the internal ring; this is then twisted down firmly, cut off and the ends bent over and crushed down, that they may cause no irritation. The slack of the ligaments is then cut off, leaving just sufficient to fill the bottom of the wound. The ligaments are then split to within a short distance of the silver wire and turned partly outward from each other and stitched with fine gut to the lateral walls of the wound, the latter being then closed, a small drainage tube inserted, and the whole covered by an antiseptic dressing. The silver wire is left to become permanently encysted, and thus hold the ligaments firmly in place.

A high posterior plastic operation should then be made on the vagina, and upon the removal of the sutures from the latter operation a Hodge, or perhaps what is better, an Albert Smith pessary with a high bar should be introduced and worn for not less than six months. A case of complete procedentia of years' standing operated on by this method ten months ago is to-day perfectly well, and with the patient in a standing position

the cervix can only be reached by the full length of the index finger.

In conclusion, therefore, I will say that this method of fastening the round ligaments is, in my opinion, superior to any with which I am acquainted, as it affords a firm anchorage and thus prevents the uterus from dragging upon the ligaments, thus drawing them gradually out, defeating entirely the object of the operation.

I am not unmindful that the operation is strongly condemned by men of much greater experience than myself; yet I very much desire to call attention to what appears to me to be a simple, safe and radical cure for one of the most distressing ills which woman is heir to.

166 Euclid avenue.

MEDICAL PROGRESS.

Resection of the Intestine.—Czerny, of Heidelberg, reports (*Centralblatt für Chirurgie*) a series of twenty-one cases in which he has performed resection of the intestine. Of these eight died. Inasmuch as double resection was performed four times (with two deaths and two recoveries) and in one instance five tubercular fistulæ were closed the results of operation are seen to be improving greatly for these cases must be regarded as unusual. Although the results set forth are better than the general average for these operations the reporter does not doubt that intestinal resection in the hands of a skilful operator will exhibit a similar progress to that made by Spencer Wells in the case of ovariotomy. With improvement in the results obtained the indications for the operation will multiply, and these are more likely to present themselves than are the indications for the removal of the ovary. Although accident plays a great part in statistics based upon few cases still it appears significant to the reporter that whereas up to 1885 he had seven cases with four deaths, since that time he has performed the operation fourteen times with only the same number of fatal cases. Death results generally from collapse, less often from septic peritonitis, which can never be entirely prevented. In only one case was the suturing a failure; in this case there was necrosis of the sutured edges.

In eight cases the operation was performed at the ileo-cæcal regions with four deaths; in two cases at the transverse-colon; in one case at the flexum near the rectum; in five cases the small intestine was the seat of operation, one case being fatal; in four cases there was a double resection with two deaths; in one fatal case there was six lines of sutures.

Union always takes place by first intention. In one case only, where there was a tubercular fistula, did the fistula return. In all the cases a double row of silk sutures was employed, the intestine being dropped in the abdomen. Drainage of the abdominal cavity was nearly always avoided. The double row of sutures when properly applied secures such perfect union of the intestine that the aim to-day is to perfect one's individual technique rather than to seek new methods of operating.

The Influence of Certain Medicaments Upon Artificial Digestion.—Arthur Katz has made experiments with a view to determining the influence of certain medicaments upon artificial digestion. For digestive material he employed Schültz's solution of the white of egg and dried white of egg. His digestive fluid consisted of a mixture of 1 liter of water and 2 grams of pepsin, with the addition of from 2 to 2½ per mil. of muriatic acid. The material to be tested was added to the fluid and the whole placed in an incubator to digest. With the necessary control experiments it was shown that muriate of morphine and sulphonal delayed the formation of peptones, the latter, however, only in large quantities, such as 3 grm. in 200 ccm. of the fluid. Atropine, strychnine, tr. nucis vomicæ, chloral hydrate, arseniate of potassium, sulphonal in small quantities, tr. strophanti and creosote were without influence upon the artificial digestion. The formation of peptone was increased by the sulphate of bismuth and the muriate of quinia.

Treatment of Pulmonary Tuberculosis with Creosote.—Sommerbrodt (*Centbl. f. Kl. Med.*) reiterates his claims for the creosote treatment of phthisis introduced by him. He maintains the assertion made in his first publications that the initial stage of the disease can be cured by creosote, while in the later stages the patient can be greatly relieved by the treatment, as has been proved by his own experience and that of many others. A positive explanation of the favorable action of creosote has of course not been given. Guthmann's experiments showed that rather more than 1-4000 part of creosote suffices to prevent the development of tubercle bacilli in blood serum, but to produce the same result in the body would require the presence in the circulation of 1 grm. of creosote, a much larger quantity than could be administered by the stomach. Sommerbrodt suggests the possibility of a cumulative action of the creosote when given in as large doses as possible, such as 1 grm. *per diem* for months at a time. Cornet's experiments on guinea pigs likewise furnish no explanation of the favorable action of creosote; they show its lack of influence in the infection of these animals wish tubercle bacilli, so that according to him the favorable influence of creosote upon phthisis is to be ascribed to its action in improving the

appetite and in diminishing the secretion of the bronchial mucous membrane. Sommerbrodt however has observed such an extremely favorable action upon the bacilli and the morbid processes in the lungs in the human subject that he is not satisfied with Cornet's negative experiments upon guinea pigs. He prescribes the remedy in capsules of 0.05 grm. with balsam of tolu, giving in all as much as 1 grm. per diem.

Microbes in Fissures of the Anus.—M. Jorissenne (*Le Bulletin Médical*) maintains that the persistence of fissures of the anus is due to the presence of microbes, and that the antiseptic is the only rational treatment; it also possesses the advantage of being essentially analgesic in its action. Sublimate is the most promptly curative agent; its application in the form of an ointment is painless, convenient and efficacious. The application should extend into the rectum as far as 3 cm.

Resection of the Rectum.—In a report on the subject of prolapse of the rectum Dr. Josef Bozdanik says this trouble is of frequent occurrence particularly in children; in the majority of cases a cure is effected by the suitable treatment of the intestinal catarrh, but in several cases local astringents or caustics must be employed together with properly applied bandages. Many cases however resist medical treatment and after the unsuccessful employment of parenchymatous injections resort must be had to surgical operations. Sabadier excised the prolapsed mucous membrane and stitched the edges of the wound together. Dupuytren carried out Hey's idea which consisted in narrowing the oval opening. Dieffenbach reduced the prolapse and then cut out wedge-shaped pieces from the lower part of the rectum and from the anus and then united the edges of the wound by means of deep sutures; Lange's method was not less radical, and therefore surgeons began to return to the older methods of cauterization and parenchymatous injections. The reporter describes a form of operation practiced by him which differs from that of Mikulicz, Billroth and Nicoladoni only in the mode of introducing the sutures. The result of the operation in that entire portion of the rectum protruding beyond the oval opening is removed and an annular stricture is formed above the sphincter which however does not interfere with defecation. The mortality in the operations of which the reporter is advised was *nil*.—*Weiner Med. Woch.*

Variations in the Caustic Action of Carbolic Acid.—M. Charles has shown that carbolic acid in solution with glycerine or alcohol is not caustic, whatever be the degree of concentration. Even saturated solutions are readily borne by the skin and mucous surfaces, while the concentrated aqueous solutions are markedly caustic and produce a lively sensation of heat even upon the healthy skin. A small addition of water, however, to an alcoholic or glycerine solution suffices to render it caustic. The fact is readily explained if we admit that an instable combination which is decomposable by water exists between carbolic acid, a body related to the alcohols, and alcohol or glycerine, which latter is also an alcohol. In fact a saturated aqueous solution of carbolic acid produces more heat when mixed with glycerine than when added to a corresponding quantity of water.—*Le Bul. Méd.*

Artificial Production of Asthma.—Aronsohn (*Cent. Bl. für Klin. Med.*) reports the case of a clergyman, 33 years of age, who suffered from hoarseness, but had never been troubled with asthma, in whom a fibrous polyp of the right middle turbinated bone was discovered. In consequence of the first attempts at removing the polyp attacks of oppression of the breast and dyspnœa appeared upon the same day and the following night, but disappeared after the completion of the operation. The case, then, was one of asthma artificially produced in one who had never before suffered from this disease.

Treatment of Pruritus Cutaneous Universalis.—In the treatment of general cutaneous pruritus a great number of remedies, mostly nervines, have been recommended, with the idea that iodopathic pruritus is purely a neurosis of sensibility. Topical treatment in these cases may properly be set down as useless; likewise the internal administration is not always productive of good results. Dr. Wertheimber recommends the use of salicylate of sodium, with which he has achieved surprising results in three cases. He prescribes it in the form of a 3 per cent. solution, the dose being two tablespoonfuls per diem. —*Corres.-Bl. für Schw. Aerzte.*

A Synthetical Carbolic Acid.—The anilin and soda factory in Ludwigshafen has introduced a so-called chemically pure carbolic acid made by synthesis. This product has a melting point of from 41–41° C. It is distinguished from the ordinary carbolic acid derived from tar by the absence of the pungent odor which characterizes the latter, and which is due to impurities present in the tar. Aside from this advantage it has been found by Garré that it is much less irritating to the skin than the ordinary article, and much less apt to produce chaps and eczema. A very convenient form of the new acid has already appeared in the shape of compressed tablets of the pure acid containing 1 and 2.5 grams each.—*Corres.-Bl. für Schw. Aerzte.*

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SATURDAY, MARCH 1, 1890.

MOOT POINTS IN THE DOCTRINE OF PLACENTA PRÆVIA.

We are unable to agree with our esteemed contemporary, *The New York Medical Journal*, in the opinion expressed in the editorial columns of a late issue,[1] that the signs of the times point to a lack of interest in the theory and practice of midwifery, indicative of the "decay of obstetrics." While prepared to admit that current medical writings are constituted in a disproportionate degree by contributions from practitioners blessed with the "abdominal instinct" and endowed with an affection for "pus tubes," still we think that obstetrics receives adequate representation in that which shall abide as the real literature of the day.

From among the numerous topics that have successfully engaged attention during the past year, and that might all be cited as illustrative of the truth of the proposition just formulated, we select placenta prævia, as well on account of recent material advances in doctrinal knowledge, as by reason of the import of the condition itself in practice. Let us note briefly some of the more significant contributions to the moot points in the doctrine of this complication.

KALTENBACH[2] agrees with HOFMEIER as to the pathogenesis of placenta prævia, and ascribes it to the persistence or to the new growth of the villi of the chorion læve and the development of the ovular decidua, which may or may not be conditioned upon antecedent corporeal endometritis. Although this hypothesis is not positively demonstrated, since sufficient preparations from early pregnancy as yet have not been examined, still it is rational and highly suggestive.

EDWARD WARREN SAWYER[3] defends the thesis, "partial rotation of the ovum in early pregnancy a cause of placenta prævia," upon the ground of the frequent occurrence of marginal insertion of the cord. But marginal and velamental insertion can be more plausibly accounted for on Schultze's hypothesis, while the recurrence of placenta prævia in the same individual—a well established fact[4]—negatives any general application of Sawyer's notion.

In diagnosis it is of interest to note the value assigned to abdominal palpation, as shown by HERBERT SPENCER'S communication to the Obstetrical Society of London.[5]

Chief interest, however, centres naturally in the treatment, and this phase of the subject was ably presented before the Obstetric Section of the British Medical Association of Leeds last August. The paper by BRAXTON HICKS is especially noteworthy, and we venture to copy his rules as fairly representative of the highest responsible opinion and of the best practice the world over.

Braxton Hicks[6] writes:

"1. After diagnosis of placenta prævia is made, proceed as early as possible to terminate pregnancy.

"2. When once we have commenced to act, we are to remain by our patient.

"3. If os be fully expanded and placenta marginal, we rupture the membranes and wait to see if the head is soon pushed by the pains into the os.

"4. If there be any slowness or hesitation in this respect, then employ forceps or version.

"5. If the os be small and placenta more or less over it, the placenta is to be carefully detached from around the os; if no further bleeding occur, we may elect to wait an hour or two; but should the os not expand, and if dilating bags are at hand, the os may be dilated. If it appears the forceps can be admitted easily, they may be used; but if not, version by combined external and internal method should be employed and the os plugged by the leg or breech of fœtus. After

[1] The New York Medical Journal, February 1, 1890.
[2] 62 Deutscher Naturforscher Versammlung, Berlin klin. Wochenschrift, Oct. 28, 1889.
[3] Transactions of the American Gynecological Society, Vol. xiv, 1889, pp. 317-323.
[4] Lancet, April 6, 1889, Fitzpatrick.
[5] Lancet, June 15, 1889, p. 1189.
[6] The Medical Press and Circular, Aug. 28, 1889.

this is done the case may be left to nature, with gentle assistance, as in footling and breech cases.

"6. If the os be small, and if we have neither forceps nor dilating bags, then combined version should be resorted to, leaving the rest to nature, gently assisted.

"7. If, during any of the above manoeuvres, sharp bleeding should come, it is best to turn by combined method, in order to plug by breech.

"8. Where the fœtus occurs before the end of the seventh month, version by combined method, no force following, is the best plan.

"To these I may add, if, however, we employ a routine method in all cases, it will be found that the version by combined method, no force following, gives a result as good as, if not better than, any."

BOOK REVIEWING.

One of the famous *literati* of the day makes it a cardinal rule never to read a book before reviewing it, because, says he, "it might prejudice me if I did, and I am always desirous of having my mind unbiased." It might be supposed that the principal idea in reviewing is to point out the good and the bad in the work, to assist in the judgment of the book, and to indicate in a general way its value. Not so! One cannot judge these matters *a priori*. Roughly speaking, we may say that there are at least three standpoints from which the reviewer sees his subject, namely: the commendatory, the condemnatory and the self-laudatory. The character of the review depends largely upon which of these eminences the operator has been located.

It is customary for reviewers of the first class to state, after the usual preliminaries, that it is hardly necessary to more than mention the well-known author's name, but, fearing that there may be among the wide audience addressed, some who are not so fortunate as to know the distinguished author, it would be well to state that the book is gotten up in the usual style of Messrs. Blank, and that the paper and type are good and clear. Altogether, the work is a commendable one and of especial value to the general medical student and busy practitioner. What miserable bathos!

Not so the reviewers of the second class. We rise from a perusal of their work with a feeling that we have been present at an intellectual Donnybrook Fair. Our ears still ring with the blows of the shillalah, for the only rule of action seems to be to strike at everything in sight. What is left of the book after the melée usually goes by unchallenged.

Our self-laudatory friends have an entirely different *modus*. The main desire among them seems to be, to direct attention to the great loss the author sustains in not having invited them to assist him in editing his work. The many points neglected or not known are freely pointed out and elucidated. The whole matter calls to mind very vividly Dr. Beale's article on intestinal mucous membranes. He says that successful critics are often constipated, and that many a severe article would never have seen the light, if the glands of the critic's large bowel had been in good order at the time of writing. A little humiliating, is it not, and a sad exemplification of human frailty—that the foundations for adverse criticism should rest upon the baseless fabric of such structures.

THE EARLY PREPARATION OF PAPERS.

The Secretaries of the various Sections are actively engaged in securing a supply of papers to be presented at the next annual meeting which convenes at Nashville on May 20.

May we suggest that the writers of such papers, if they have not already done so, enter immediately and in earnest upon their work? Let the several articles represent their purpose fully and receive at the hands of the writers a most careful revision, and when revised it is desirable, as far as practicable, that type-written copies be presented for publication. Those who are to command the time and attention of their associates should have the matter to be presented well matured and concisely expressed. The future success of the Association is largely dependent upon the value of papers thus presented, and its status both at home and abroad is to be determined largely by the work thus submitted.

Let there be a full supply of papers; let them bear the evidence of careful preparation, let them receive ample and able discussion when presented, and let both papers and discussions find their way in good shape to THE JOURNAL. Thus will its pages be furnished to repletion with valuable matter, and the Association be justly represented as to the ability of its writers.

PAPERS FOR THE ANNUAL MEETING.

From the known efficiency of the officers of the several Sections, it is safe to presume that a full supply of papers will be secured for the next annual meeting.

If every Section shall be as well represented as it was at Newport there certainly will be no lack. We commend to our present committees the work done by their immediate predecessors and simply ask them to do likewise.

The several secretaries are already in correspondence and as soon as their programmes are ready for publication they will appear in the JOURNAL.

Writers will please bear in mind that the earlier their names appear on the programmes of their several Sections the earlier they will be placed in the order of publication.

In order that those who so desire may communicate with the officers we herewith present the names and addresses of the secretaries of the several Sections.

As the programme should be completed and ready for publication on April 1 no time should be lost on the part of those who purpose to prepare papers to be presented at Nashville.

The name of the secretaries of Sections are as follows:

Practice of Medicine.—Dr. H. McColl, Lapeer, Mich.

Surgery and Anatomy.—Dr. Jno. Blair Deaver, 120 South 18th street, Philadelphia, Pa.

Obstetrics and Diseases of Women.—Dr. Joseph Hoffman, 126 W. Diamond street, Philadelphia, Pa.

State Medicine.—Dr. F. S. Bascom, Salt Lake City, Utah.

Opthalmology.—Dr. E. J. Gardiner, 70 Monroe street, Chicago, Ill.

Laryngology and Otology.—Dr. Frank H. Potter, Buffalo, N. Y.

Diseases of Children.—Dr. E. F. Brush, Mount Vernon, N. Y.

Medical Jurisprudence.—Dr. T. D. Crothers, Hartford, Conn.

Dermatology and Syphilography.—Dr. Wm. T. Corlett, Cleveland, Ohio.

Oral and Dental Surgery.—Dr. E. S. Talbot, 125 State street, Chicago, Ill.

EDITORIAL NOTES.

HOME.

THE METROPOLITAN MEDICAL SOCIETY.—A new medical society has been started in New York city, which will not limit its membership to the city itself but will draw from the entire metropolitan district. Meetings will be held twice a month.

MEDICAL STUDENTS NAMED IN A WILL.—Mayor Grant, of New York city, has received information that the will of Count Henry Hardegg, who died at Vienna, Austria, in May last, names that former city as a possible legatee. The bequest, if it ever comes, is to be set apart for the benefit of struggling medical students. The amount of the legacy has not yet been discovered.

THE ARKANSAS STATE ASYLUM DAMAGED BY FIRE.—The Insane Asylum at Little Rock, Arkansas, was very nearly destroyed by fire on the 16th instant. One wing was burned down, involving a loss of $35,000. There was no loss of life although the inmates, numbering nearly five hundred, had all to be removed from the buildings. Many of the patients resisted removal and by their outcry and screams increased the terrors of the accident. The boiler-room and laundry are thought to have been the parts in which the fire originated.

DR. FRANK FERGUSON, pathologist to the New York Hospital, has been elected Professor of Pathology in the New York Post Graduate Medical School and Hospital.

TYPHUS FEVER IN NEW YORK.—During the past two months typhus fever has escaped through the quarantine of the New York Harbor, and thence found its way to various parts of the country. The line of steamers from Antwerp has brought in the greater number of these cases, and especially the steamer Westernland. In the New York city hospitals as many as seven cases have been among the immigrants brought over by that steamer. There is said to be at Antwerp one or more emigrants' lodging-houses that are known to be infected with fever,—"fever-nests" that menace the health of two continents. Official correspondence has been had regarding these dangerous spots, calling for their sanitary reformation.

C. S. AYRES, A.M., M.D., the well known

oculist of Cincinnati, has been elected President of the Cincinnati Polyclinic Graduate School of Medicine. This institution could have no better assurance of success than calling such an able and widely known man to the presidency.

Death of Medical Director Adrian Hudson, U. S. Navy.—The medical corps of our Navy suffers a severe loss in the sudden death of this valuable officer, who died at his post, in the service of his country, at the early age of 52 years. We present in the present number of The Journal a brief record of his life and services, which comes to hand from the pen of Surgeon Albert L. Gihon.

FOREIGN.

Phthisis in High Altitudes in Switzerland.—*The Lancet* quotes a report by Dr. L. Schrötter on the distribution of tuberculosis throughout Switzerland, from which it appears that even the inhabitants of high altitudes are not free from that disease, as many are wont to suppose. The mortality statistics of recent years indicate that no district is exempt from it. The proportional mortality by phthisis is not so great in the high as in the low-lying sections, but the statistics do not show that it would be a correct statement to formulate the ratio as inversely proportionate to the altitude. The element of occupation here steps in; for wherever a large industrial population exists the tuberculous mortality ascends; agricultural populations always suffer less, from this cause, than the industrial, where the altitude is the same for both.

Cholera in Russia.—The general public in Russia having become alarmed at the possibility of cholera following upon the heels of the influenza, by reason of some causal relation between the two diseases, the Medical Council of St. Petersburg has published the following bulletin: In view of the fact that according to the latest scientific discoveries all epidemic disease is produced by germs of contagion, each of which possesses a specific character; and in view of the fact that no species of microörganisms producing a definite disease is capable of such transformation as to enable it to produce another disease, each species of the microörganisms preserving for ages its original characteristics; and considering also the fact that no contagious disease can prevail in a locality if its proper germs of contagion have not been previously introduced, the Council declares that the epidemic of grippe can not engender an epidemic of cholera. Although, in fact, the sanitary conditions have exercised no influence upon the propagation of the grippe, the Council finds, nevertheless, that it would be very opportune and useful to provide for the proper sanitation of the city.

The death of Dr. Gerhard, the senior member of the Faculty of Medicine of Paris, at the age of 81, has just been announced. He is stated to have been in active practice to the end, and had been so for fifty-two years at Strasburg.

Benares, the sacred city of the Hindoos, and next to Damascus the most ancient city in the world, is to have a water supply, while Delhi, the ancient seat of the Mohammedan Empire, is to be equally fortunate in obtaining a large public water supply.

Surgeon Le Quesne, of the British Army, has received the Victoria Cross for bravery in dressing the wounds of an officer while exposed to the fire of the enemy during an engagement in Burmah last May.

Leprosy in China.—Leprosy is viewed by the Chinese as infectious, contagious and heriditary, but it is prone, they think, to exhaust itself in four geuerations. As many as eight varieties of leprosy are recognized. In the interior of China there are leper-villages to which all suffering from this disease must be sent.

Medical Congress in Cuba.—The *British Medical Journal*, January 11, has the following notice of a congress set down for January 15, at Havana: "Many of the principal members of the profession are expected to take part in the proceedings. Among the subjects for discussion are hæmatochyluria, the use of mercury in the torrid zone, physio-pathological studies of Cuban women, origin of Cuban yellow fever and others suggested by the *genus loci*. In the surgical department there is a great preponderance of ophthalmological subjects and a total absence of cancer."

Professor von Ziemssen, of Munich, reached his 60th birthday December 13. It was the occasion of a celebration by the faculty and students of the University.

TOPICS OF THE WEEK.

A JOURNALISTIC REVIEW OF THE BRITISH REGISTRAR GENERAL'S ANNUAL REPORT FOR 1888.

For such persons as, with King Richard II., love to "sit upon the ground and talk of worms and graves and epitaphs" and kindred subjects, there is much congenial reading to be found in that portion of the Registrar-General's annual report which deals with deaths. The recently issued report is for the year 1888, which in these nineties sounds very much like ancient history; but the methods of the Registrar's office are notoriously leisurely, and, after all, there are certain advantages in a late appearance. For instance, it affords an opportunity of drawing comparisons between this country and others which make greater haste in getting out their statistics. From these we learn that only one European country has a lower death-rate than England—to-wit, Norway, where only sixteen persons out of a thousand die in a year. The other end of the pole is in Austria, where the rate is 29.2. With us it is 17.8 for a population of over thirty-seven millions. It has often been pointed out that these figures in no way represent an equal distribution of sex, women being in the majority by very nearly a million. In common justice it might at least be expected that, there being a greater number of women, more of them should die, but this is not the case. For males the death-rate is 18.8 per thousand; for females only 16.8. Women, in fact, have the advantage of a greater hold on life nearly all along the line. The first five years of existence are a most ticklish time for both sexes, but the girls get through them much better than the boys, who in that period die at the rate of fifty-two to a thousand living males. Out of a total of 510,971 deaths in 1888, as many as 198,064 were those of children under five, and boys were in excess by nearly seventeen thousand. The dangerous first *lustrum* once passed, a few years of comparative safety commence, till the age of ten is reached, when the chance of death occurring is reduced to its minimum. From fifteen it slowly rises again, and it is only at this period in life that males have the upper hand, there being a slight excess of female mortality.

The recognized causes of death are more than might be supposed, over 150 being enumerated on the register. The rate at which we live in the nineteenth century is borne witness to by the rate at which we die, no fewer than 49,985 of registered deaths in 1888 being attributed to diseases of the nervous system. Consumption and phthisis, apparently, are not disappearing so rapidly as some sanguine persons have supposed. Third on the list are the ailments classed together as diseases of the circulatory system. What at first sight seems startling is the greater mortality caused by illnesses which are not as a rule reckoned very alarming in comparison with others which have the name of being more serious. Thus 341 persons out of a million living die of measles and only 6 of typhus; 222 die of scarlet fever to 36 killed by small-pox; 428 of whooping-cough to 168 victims of diphtheria. The explanation is, of course, that the complaints which account for the larger number of deaths are proportionately more common. The odds against life running what may be supposed to be its natural course are something less than a thousand to one. Only 947 deaths of a million are put down to old age. The difference in degree of vitality which distinguishes the two sexes is further marked by the varied way in which they are affected by the same disease. More men dying, it is to be expected that any given disease would be more likely to be fatal to a man than to a woman; and this, as a general rule, is the case. Scarlet fever is far more common among females than males, but the former have a much better chance of getting over it, the majority of deaths due to this cause being among men. Cancer, St. Vitus's dance and whooping-cough constitute the whole list of complaints common to the two sexes which are more fatal to women. The greater liability of girls to whooping-cough is strongly marked —554 die of it to 451 males.

Perhaps the most morbidly fascinating of the Registrar's statistics are those dealing with what are classified as deaths from violence. In the year under notice such deaths numbered only 17,534, the lowest percentage yet reached. Violence includes homicide, suicide and fatalities arising out of accident or negligence. In murder, if in nothing else, there is absolute equality between the sexes. Nine per million of each die by the hand of another. The proportion seems a large one, but as many as 60 per cent. of homicidal deaths are infanticides. The first twelve months of life escaped, the odds against murder decrease till the age of 15 is reached, when there is next to no chance of it. For a few years this happy state continues, and then the chances increase again till, if the case happens to be a man, the older he grows the more likely he is to be made away with. The suicides of the year numbered 2,308, which is the largest amount ever recorded for this country. In this department, again, males greatly outnumber females, who are either less given to despair or are more tenacious of life. Gunshot, the knife, poison, drowning and hanging are the favorite means employed for disposing of life by suicide, and of these hanging is far the most common. It is sad to reflect that out of every million men now living in England twenty-seven will hang themselves, sixteen will meet death in the water, thirteen will cut their throats and seven shoot themselves. Women will make away with themselves in lesser numbers, but by the same means, with the exception of shooting, which is a method of *felo-de-se* that has scarcely ever been used by a woman. Experience has shown over and over again that there is very little probability of being proved wrong by the event in speaking prophetically of suicide and the manner of it. Year after year there is scarcely any variation in the melancholy record, and when once it is known that a certain number of persons have sought death by certain means in the past, it may be taken for granted that the figures will repeat themselves with remorseless accuracy.

Of the violent deaths there remains a balance of 14,908 which are accounted for by accidents. Large as the number seems, it is a trifle to what might be expected from the rates charged by assurance companies. The

usual odds laid by an accident company are £1,000 to £4 that you do not die from an accident in a year. Supposing that the whole population of the country were insured against accidents in one office, each person paying £4 and being guaranteed £1,000 in case of death by mishap, the premiums would reach the figure of £143,746,868, and the sum to be paid for deaths would amount to £14,908,000, leaving, after a deduction of a few millions for working expenses, the very respectable profit of £130,000,000. The chances of meeting with accidental death are highest in Monmouthshire, where there are 902 to the million, and next in the northern mining counties. In London the number per million is 697; and lowest on the list comes Bedfordshire, where it is only 343. Bedfordshire, then, is the place where those who have a horror of sudden death should locate themselves, but the county which has a lower death-rate than all others is Surrey—excluding, of course, the metropolitan area. Lancashire still maintains its reputation as the county seat where more deaths occur in proportion to its population than any other in England.—*St. James Gazette.*

PROFESSOR TYNDALL ON THE GERM THEORY.

If lucid and full exposition is sufficient for instruction, the address lately delivered in the Ulster Hall, Belfast, by Professor Tyndall must have left his audience with a fairly clear idea of the part played by living organisms in disease and putrefaction. The facts connected with this notable discovery of modern times were marshaled by the speaker with great skill and in a descriptive manner which could hardly fail to interest the most casual hearer. The close connection between Lister's experiments and the conspicuous triumphs of recent surgery were briefly but clearly explained. The important part played by the genius of Koch in disclosing the germ origin of tubercle, splenic fever and cholera was discussed at some length. An illustrative confirmation of the experiments with tubercle was afforded by quoting the observations by Cornet, which go to prove that the infective media of phthisis consist of germs liberated in the dust of dried sputum, but harmless while imprisoned by it in a moist condition. The climax of interest was reached, however, in those passages of the address which described the life and work of the prime investigator of germ action—Pasteur himself. The recital of the steps by which this most laborious and careful observer proceeded from a general recognition of the principles governing the growth of living organisms to a clear understanding of their specific influence forms in itself a chapter as romantic as it is real in the history of modern science. Remarkable though it is, however, Professor Tyndall had no difficulty in showing that it is excelled alike in interest and in importance by the narrative of those practical deductions, the explanation and application of which have conferred on Pasteur's work its most characteristic feature and its chief glory. Growers of silk, who learned from him the germ origin of *Pebrine,* wine-producers and brewers, to whom he taught the causes of morbid fermentation and its easy remedy, were among the least of those he has aided. For a time he took no directly active share in unlooking the secrets of germ growth in the human body. Later, when animated, perhaps, by the example of his German counterpart, Koch, Pasteur bent his energies to this new sphere of his old work, his success, now historical, was even more striking. We need not do more than refer to the remarkable series of experiments which culminated in establishing triumphantly the preventive and curative power of modified inoculation over such intractable scourges as anthrax and rabies. Professor Tyndall did well to acquaint his hearers with some of the details of these researches. He was also particularly happy in closing with a statistical summary of the results obtained by inoculation in rabies, which proves that the mortality from this disease, thanks to the Pasteur method, fell in 1887 from the high average of 70 to that of 3 per cent. Such results, he maintained, asserts with a logical force which cannot be resisted the reason and the justice of performing, even though it imply vivisection, such experiments as are needful for their attainment.—*The Lancet.*

INFLUENZA AND DENGUE.

The *Berliner klin. Wochenschr.* has recently published a tabular comparison of influenza and dengue by Dr. Limarkis, of Constantinople, to the following effect. D. stands for dengue, I. for influenza. Localization: D. hot countries; I. all latitudes. Duration of epidemic: D. three to five months; I. one to two months. Extension: D. slow, and from small centres; I. rapid, and over large tracts at a time. Commencement of disease: D. always sudden; I. almost always sudden. Fever: D. always very high; I. not always very high. Nervous system: D. lassitude, pains in the head and limbs; I. the same. Larynx and trachea: D. seldom affected; I. always affected. Dyspnœa: D. never; I. frequent. Gastric symptoms. D. always present, violent and persistent; I. may be absent altogether. Exanthem: D. always, beginning in face and descending, erythematous, followed by desquamation; I. seldom, irregular. Headache: D. a feeling of pressure from without; I. sharp, internal, often neuralgic. Complications: D. rarely the heart, liver, or kidneys may be affected; I. frequent, chiefly bronchitis and pneumonia. Reconvalescence: D. very slow; I. usually quick. Prognosis: D. always favorable; I. occasionally bad. Lower animals affected: D. dogs and cats; I. horses. As regards Spain, Dr. Sentiñon writes that the epidemic which is rapidly gaining ground there is undoubtedly influenza, and it is distinctly different from cases of dengue, which have been well observed in that country. The question—influenza or dengue?—has been raised by medical men, in Paris especially, but authorities incline to the belief that the two diseases have nothing in common.

TIME SOLVES MYSTERIES.

At last it becomes apparent that when Columbus set his face westward, he had Chicago in his eye. It seems a little singular that it required four centuries to determine the nature of his malady.

PRACTICAL NOTES.

MENTHOL IN ACUTE RHINITIS, INFLUENZA, AND OTHER AFFECTIONS OF THE NOSE AND THROAT.

Mr. J. Lennox Browne, F.R.C.S., Ed., writes in the *Medical Press and Circular*, Jan. 8, 1890, regarding the use of menthol in the above affections, which our readers will find a subject of interest at the present time. He says that the vapor of menthol checks in a manner hardly less than marvellous, acute colds in the head, and is also to be recommended with a certainty of success, if used on its first onset, in arresting or as a preventive of infection of epidemic influenza, and this even for cases in which the nasal symptoms commonly associated with the word influenza, are not manifested.

Menthol exerts its action as follows:

1. It stimulates to contraction the capillary blood-vessels of the passages of the nose and throat, always dilated in the early stages of head cold and influenza.

2. It arrests sneezing and rhinal flow.

3. It relieves, and indeed dissipates, pain and fulness of the head by its analgesic properties, so well known by its action when applied externally to the brow in cases of *tic douloureaux*.

4. It is powerfully germicide and antiseptic. It thus kills the microbe of infection, and prevents its dissemination.

The remedy may be employed by means of a general impregnation of its vapor through a room or house, or locally to the nostrils and air passages; for both which purposes there are several methods:

a. A 10 to 20 per cent. solution of menthol in almond oil, in liquid vaseline, or in one of the many other odorless paraffin compounds, can be sprayed into the nose or throat, or about a room.

b. By placing 20 or 30 grains in an apparatus specially designed by Resenberg for administering the drug in cases of laryngeal consumption by inhalation, in the form of vapor mingled with steam.

c. By placing a similar amount or one or two drachms of the oily solution in a Lee's steam-draft inhaler, or bronchitis kettle.

d. By a simple arrangement of placing a saucer of water containing a similar quantity of the crystals over a gas burner in the hall, by means of which the whole house is kept constantly permeated with the drug.

e. But by far the most convenient method for personal use is to carry always the ingenious pocket menthol inhaler, known as Cushman's, which should be used not only on the first approach of an attack, but three or four times a day during an epidemic, and always in cold-catching weather by those subject to head colds.

The instrument consists of a glass cylinder four inches in length, half an inch in diameter, and open at both ends. The tube contains crystals of menthol closely packed and prevented from escape by perforated zinc and cork. The opening at one end is twice the size of the other, the larger being intended for inhalation by the mouth, the smaller for the nostril. The latter is the method which the author, by preference, recommends. It is not to be simply smelt, but well sniffed or inhaled, so as to cause some tingling or smarting, a sensation which is quickly followed by that of coolness, and openness of the previously "stuffed" and heated nostril.

The author concludes: "I have also employed menthol with advantage in the form of nasal spray or brush application in diphtheria. For all forms of nasal disease causing obstruction to the natural breath-way, I prescribe the menthol inhaler to the extent of hundreds per annum. By its use, when the nasal discharge is excessive, it is checked; when deficient and thickened, as in hypertrophic rhinitis, its healthy character is restored; and when arrested, inspissated and malodorous, as in atrophic rhinitis, fluidity is promoted and the foul smell corrected."—*Boston Med. and Surg. Journal.*

A VALUABLE PRESERVING FLUID.

Dr. Alexander Macalister, in his recent Text-Book of Human Anatomy, recommends the following mixture for the preservation of anatomical material:

Alcohol	30 per cent.
Glycerine	10 " "
Carbolic acid	2 " "
Water	58 " "

TREATMENT OF SCARLET FEVER AND QUINSY BY CHLORAL HYDRATE.

Dr. James C. Wilson highly recommends chloral hydrate in scarlet fever in frequently repeated small doses of one to five grains, according to the age of the patient, as easy of administration and being made palatable, and well tolerated by the stomach. having a marked sedative effect, which is highly satisfactory; controlling the inflammation in degree and extent both in the throat and kidneys, and preventing the complications and sequelæ, such as otitis media and glandular inflammation. In quinsy also, another writer says, a gargle of three or four grains to the ounce of glycerine is almost a specific.

AN EXCELLENT OINTMENT FOR ACNE

May be formed by taking two parts of resorcin and boracic acid, and adding to it twenty parts of vaseline. This should be rubbed in night and morning, after plenty of hot soap and water and a good rough towel has been used.

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, January 17, 1890.

V. P. GIBNEY, M.D., IN THE CHAIR.

DR. W. R. TOWNSEND presented a case of

CONGENITAL TALIPES — RIGHT EQUINO-VARUS, AND LEFT CALCANEO-VALGUS.

The case was of considerable interest on account of its rarity. Mr. Tamplin states that out of 764 cases where the deformity was congenital, there were only fifteen in which there was varus of one foot and valgus of the other; and only nineteen cases of calcaneus. Dr. Townsend said that this case came to him at the Hospital for Ruptured and Crippled on December 23, when only 10 days old. It was the mother's second child, and the labor had been normal; there was no history of club foot in the family. He had already commenced treatment of the right foot, and consequently the deformity was not so marked as when he had first seen the case.

DR. A. M. PHELPS said that this was only the second case of the kind that he had seen; and in connection with it, he desired to present a plaster cast of two feet removed from the womb of the mother after her death at the sixth or seventh month of utero-gestation. It showed equino-varus of the left, and calcaneo-valgus of the right foot, and was an admirable example of the manner in which the deformity had been produced by the pressure of the uterus. There was no history connected with it beyond what had been stated. The original is in Prof. Volkmann's museum at Halle, Germany.

DR. JOHN RIDLON remarked that the chief interest in this class of cases is connected with the subject of their causation. He had seen only one other case, which was shortly after the publication of Dr. H. W. Berg's paper on this subject. This patient had the same deformity, and in addition, clubbed hands on both sides.

DR. V. P. GIBNEY did not think he had seen more than three or four such cases in an experience of eighteen years. He thought that the retarded rotation theory, as explained by Dr. Berg, accounted very well for these cases.

DR. A. B. JUDSON said in regard to the foot affected with calcaneus that, although at first sight it appeared to be a severe deformity, it was quite amenable to treatment, and cited a case published by Dr. Churchill, of Iowa, in support of this assertion, in which he advised simple manipulations, and made an appointment to do a tenotomy one month later. At the end of that time, he was surprised to find that the deformity had entirely disappeared. In another similar case reported by Dr. Prouty, of New Hampshire, the trouble was entirely remedied by the same simple manipulations, so that when the child began to walk, the foot was absolutely normal. A remarkable case had been reported by Dr. Gibney a few years ago to the New York Pathological Society, in which the calcaneus was so extreme that the digits had made indentations on the anterior part of the leg.

The paper of the evening, on

THE OPERATIVE TREATMENT OF TALIPES CALCANEUS, PARALYTIC,

was read by DR. V. P. GIBNEY, who exhibited eight patients illustrating the advantages of the operation described in his paper. This operation was that which Mr. Willett, of St. Bartholomew's Hospital, published in the St. Bartholomew's Hospital Reports, in 1880. The technique is as follows: A large Y-shaped incision over the posterior aspect of the leg, lower fourth, the stem of the Y ending at the os calcis—the stem itself about 1½ inch in length, while each side of the V-shaped portion is about 2½ inches long. The incision exposes the sheath of the tendon. The V-flap is then dissected, the sheath is opened, and the tendo Achillis raised from its bed by a curved director. A strong catgut ligature is passed through the upper portion of the tendon to serve as a means of preventing retraction after section, and the tendon is cut through obliquely, this section being made as oblique as possible. With the vulsellum forceps, each end of the tendon is grasped, and the upper portion pulled down towards the os calcis, while the foot is fully extended and the knee slightly flexed.

The tendon is sutured with catgut, back and forth, with about three or four heavy sutures, and the end of the V-flap brought down to the end of the stem, and the edges sutured, taking every alternate stitch through the tendon itself.

The aim is to convert the Y-shaped wound into a V-shaped cicatrix. It is better to use catgut altogether, in order that the wound may not be disturbed for three or four weeks. Dressings, and plaster of Paris, which extends from the toes up to the middle third of the thigh, the knee being flexed to an angle of about 120°, and the foot extended to the full limit, complete the procedure. The operation practiced by the reader of the paper differs a little from that of Mr. Willett, in the following particular: Mr. Willett used wire and exsected a portion of the tendon. The wire he used was merely for fastening the ends of the tendon together. The objections offered to his mode were that the wire cut through the tendon, and that one was in danger of removing too much tendon.

The paper was based upon an analysis of twenty-eight cases operated upon during the past six years. The results showed seventeen good, eight

fair, and three poor. The term "good" was defined as a useful foot without any relapse after a sufficiently long time; ability also to walk without a brace or support of any kind. "Fair" was defined as a slight stretching of the cicatrix, but not enough to impair the usefulness of the foot. Shoes with the heel raised and a steel tongue are also required to make the gait satisfactory. "Poor" referred to those cases where the cicatrix had stretched and the deformity had relapsed.

The general results, however, were very satisfactory. The time elapsing between the operation and the date of last observation was as follows: From three to twelve months, 9; from one to two years, 15; from two to three years, 1; from three to four years, 1; five years, 1; six years, 1.

Sixteen healed by first intention, 12 by granulation. Of those healing by primary union, 10 were good, 3 fair, and 3 poor. Of those healing by granulation, 6 were good, 5 fair, and 1 poor. In those where granulation took place, the tendon sloughed in three instances, and a portion was removed through the wound. In no instance was a brace required, but particular attention was given to the building of the boot or shoe. The instructions were to have the heel raised at least 1 inch, to have a stiff counter, and a leather tongue reinforced by tempered steel. The hopelessness of paralytic calcaneus was discussed at length; the difficulty of correcting the deformity by means of apparatus; the great strain on the spring itself, the frequency of breakages, and the satisfactory results generally.

Dr. Joseph D. Bryant said that he had been especially interested in the statement regarding the changes which in many cases occur in the length of the new tissues which had been connected by the operation with the tendo Achillis. The subject was of much importance as bearing upon the question of the behavior of cicatricial tissue elsewhere in connection with the repair of deformities of another kind; and although it does not follow that because fibrous tissue in this particular situation retracts after the force has been taken from it, fibrous tissue will do the same thing elsewhere, the subject becomes of immense practical importance in connection with the recent methods for the radical cure of hernia. If we study the behavior of the cicatricial tissue of burns when put on the stretch, we shall find that it will stretch, but that when released, it will return to its former position, or even become more contracted. Such tissue might properly be compared to rubber which is tireless, while the tissue concerned in the operation under discussion might be looked upon as rubber which has become tired.

He would like to know if one of the cases which showed such extreme loss of power was likely to be benefited by a repetition of the operation.

Dr. C. A. Powers was particularly interested in the subject of tendon suture of the hand and wrist, in which he had had considerable experience. He had become convinced that careful antiseptic suture of these cases, with proper rest of the parts, yielded uniformly good results. Primary union seemed to be a requisite for a good functional result in hand and wrist cases, for when healing took place by granulation the tendons became caught in the cicatrix and there bound. He would like to know in what proportion of cases the author had secured primary union, and how the result seemed to be modified when healing took place by granulation.

Dr. R. H. Sayre had noticed that some of the patients exhibited were able to move the heel independently of the long flexor of the great toe, and he supposed that as the paralysis had been only partial, the shortening of the tendon had enabled the weakened muscles to act to better advantage. Such cases ought to be much benefited by the persistent use of massage and galvanism, and they present a much more favorable field for operation than those in which the paralysis is absolute, for under such circumstances shortening of the tendon only results in the formation of an unyielding fibrous cord.

The progress of the deformity, when untreated, must depend largely upon the amount of damage originally done to the spinal cord. He had seen patients with very marked cavus who, instead of walking on the bottom of the heel, walked upon the posterior portion, which had, in consequence, developed an elastic buffer. He had hesitated to interfere, as such cases do not hold out much hope of improvement, and the gait is much better than the appearance of the foot would lead one to suppose was possible.

As regards treatment, he favored the use of a brace similar to the one described by Dr. Gibney, or with an elastic spring to take the place of the gastrocnemius. Such an appliance will give the patient comfort and enable him to move about with less of a wooden tread.

The results shown in the cases this evening are exceedingly good, but he was surprised at the amount of stretching which the cicatricial tissue had apparently undergone. The usual plea against tenotomy is that the resulting scar tissue tends to contract and reproduce the deformity. This, he thought, was a mistake, for the tissue obtained after a subcutaneous tenotomy is not at all comparable to that obtained in an open wound by the process of granulation. There should be no more secondary contraction after a non-suppurative subcutaneous tenotomy than occurs in tissues after aseptic healing by blood-clot. Whatever elongation has occurred in the cases shown this evening in all probability took place not in the cicatrice, but in the muscular fibres above, the paralyzed muscle being constantly antagonized by a normal muscle and thus gradually stretched out.

DR. RIDLON said that one of the patients exhibited had been seen by him last summer, and he had then strongly favored tenotomy on account of the extreme equinus which then existed, but he saw that the foot was now in good position.

In the mechanical treatment of this condition he had been aback, but since Bernard Roth, of London, published the description of his brace for drop-toe with tempered spring at the back of the leg, he had considered that such an instrument, having a spring running from the garter line, with a steel plate to the ball of the foot, was much better than those ordinarily in use.

DR. H.W. BERG was inclined to take a gloomy view of these cases of polio-myelitis; yet he did not consider them entirely beyond help from neurological treatment. Were it conclusively proven that the nervous supply of the posterior group of leg muscles, for instance, is entirely derived from one level of the anterior gray horns in the spinal cord, or from one series of cells in the spinal cord, it is obvious that if these cells had been entirely destroyed, any electrical treatment must of necessity be useless, as regards restoring power to the limb. But it has not been proven that the nervous supply is derived in this way, and it is barely possible that a few cells, giving rise to fibres of any one nerve, have escaped the inflammation. The number of these nerve fibres remaining may be so small as to escape notice in an electrical examination, and yet be sufficient to exert an important influence upon the movements of the foot. Hence, if these healthy nerve fibres and muscle fibres to which they are distributed be stimulated by a galvanic current, they will take on a vicarious action under the irritation of the galvanic current, and will cause even in old cases of poliomyelitis, as he had frequently observed, a decided improvement in the power to extend the foot. In his experience fully 95 per cent. of the cases had been relieved, although none were cured. He did not think that even the most enthusiastic operators claimed that they did more than relieve their cases. A large number would certainly be benefited by the operation described by Dr. Gibney, but any operation including simply the soft tissues was hardly a philosophical one, and could not be expected to give as good results as one which would fix the bony tissues.

It is evident that in the cases exhibited the scar tissue has stretched as the children grew older and the weight of the body increased. This result could be postponed but not averted by furnishing a support for the foot.

DR. JUDSON said that the difficulty in walking experienced by these patients was due to their inability to use the anterior part of the foot, so that the toe cannot be pressed forcibly against the ground, and hence they walk very much like one having a peg leg or an amputation of the anterior part of the foot.

It has been stated that the aborigines of this country were in the habit of performing Lisfranc's amputation upon their captives, who were thus able to work in the fields, but were incapable of rapid locomotion towards liberty. A patient affected with talipes calcaneus is in practically the same condition.

The object of the operation described this evening seems to be to restore some of this function of the anterior part of the foot, so that the patient in walking can bring the weight first on the heel and then on the toe; but it is not easy to understand how the operation can accomplish this, for it is essential that there be very firm union between the calcaneus and the upper extremity of the tibia along the line of the gastrocnemius. With one exception the cases exhibited could not put their weight on the toe at the same time that the well foot was raised from the ground; nor is it reasonable to suppose that they will retain for any great length of time the slight connection between these parts. He was inclined to think that a cicatrix resulting from primary union was less liable to contract than one which occurs after a long process of granulation. It is difficult to overestimate the strain which falls on the tendo Achillis. The great mass of the muscles of the calf gives an indication of this force. The foot may be considered as a lever of the second class, the fulcrum being at the toe, the weight at the ankle and the power at the heel. The long and short arms of the lever are represented respectively by the portions between the ankle and the toe and the ankle and the heel, and the strain produced by the weight of the body is thus multiplied, as it falls on the tendo Achillis.

He thought that much could be done for these patients by mechanical treatment, and the object of his brace was to transfer some of the weight of the body to the anterior part of the foot. In the brace formerly described by him there was a joint at the ankle to arrest motion at a right angle; but the brace has been rendered much more durable and equally efficient by the omission of the joint in the present instrument. The weight which naturally comes on the plantar surface of the anterior part of the foot in a well person, with this apparatus comes upon the anterior part of the upper portion of the tibia in the neighborhood of its tubercle, so that the patient first strikes the heel and then puts the weight upon the anterior part of the leg in its upper portion, thereby decidedly improving the gait. The sensation is very much like that of kneeling, for the weight, instead of coming on the ball of the foot, as in the healthy person, comes on that part of the tibia which takes the weight when in the kneeling posture. These cases can not, of course, be cured by the use of such apparatus, but adult patients are often very glad to wear a simple and durable apparatus which improves the gait.

Dr. Judson remarked that Dr. C. Fayette Taylor had once said that one reason for the muscular degeneration which occurs in these cases is that the weakened and half paralyzed muscles, being compelled to endure such an enormous strain, yield at once; but if they are relieved, by means of an apparatus, of some of this duty, they are less likely to undergo such degeneration, and, therefore, the chances are better for ultimate improvement.

Dr. Frederick Peterson agreed with the reader of the paper regarding the uselessness practically of the galvanic and faradic currents in these old cases; for, he did not believe that the current could restore destroyed muscle fibre or degenerated nerve fibres or cells.

Dr. H. L. Taylor said that in considering tenotomy, one must remember that in most cases, not only the muscle but the tendon itself, is atrophied, so that it is at times a mere thread. These cases of calcaneus are exceedingly difficult to treat, and any real advance will be very welcome; but he considered that the mechanical treatment was fairly satisfactory as a palliative measure. We can retain the foot in a position of election for an indefinite period, and improve locomotion by enabling the patient to transfer the weight from the heel to the ball, not of course through the tendo Achillis, but by impinging on the upper end of the tibia by means of an apparatus.

He wished to lay emphasis on the statement that calcaneus could usually be prevented from developing, when these paralytic cases were seen sufficiently early. The foot could be held with absolute precision; and although he had followed for a considerable time, cases of paralysis of the posterior tibial muscles, he could not recall a single one in which calcaneus had developed under proper mechanical treatment.

Dr. Phelps said that in cases of flail foot with absolute paralysis, he was accustomed to do an excision, or a Pirogoff's amputation, which is a safe operation providing firm anchylosis can be secured. Unfortunately this is not always obtainable in children. When the tendon unites primarily, union takes place by blood-clot, and the result is not cicatricial tissue but a reproduction of the tendon; and therefore stretching cannot take place in the tendon itself, but in the body of the muscle. The same argument has been brought forward against the open operation for club foot, only it has been claimed that the cicatricial tissue contracted; but when healing by blood-clot follows that operation, the cicatricial mass does not contract, nor did he believe it yielded. From birth up to the third or fourth year, and even later, there is a development of the deformity, and therefore in estimating the beneficial results from any special method of treatment, one must wait a similar length of time before passing upon the result.

He had been much interested in Dr. Gibney's cases on account of the candor with which they had been presented, and the care exhibited in securing careful histories; but until the ultimate results could be ascertained, he preferred to cut the anterior tendons when required and apply a brace similar to the one which had been presented; or a brace with a posterior rubber muscle acting on a lever attached to the sole of the shoe; and in special cases, either Pirogoff's amputation or excision.

Dr. Gibney in closing the discussion, replied seriatim to the questions that had been propounded. He could not say whether a second operation in one of the cases would be of any benefit.

He had not entirely completed his table of results, and could only say that about one-half of the cases had healed by primary union, and that his analysis, as far as it had gone, failed to show much difference in the results dependent upon the method of healing. He had of course always aimed to secure primary union; but some of his best results had been obtained in cases in which the granulating process had been tedious, and even where some of the tendon had protruded, and had sloughed away, or had required removal.

He was sorry that he was unable to furnish records of systematic electrical examinations in these cases; but in the hurry of hospital work, this portion of the work had frequently been omitted. He had, however, the report of an examination made by Dr. M. A. Starr before the operation on the little boy who had attracted attention by his ability to stand on his toe and on the ball of his foot. Dr. Starr reported at that time—two years ago—that the posterior group of muscles showed well marked reaction of degeneration, and failed to respond at all to the faradic current, and he gave it as his opinion that it was very doubtful if recovery would take place. Dr. Gibney thought that most of the gentlemen present would agree with him in saying that the patient now had considerable power in that posterior group of muscles.

In alluding to electrical treatment, he did not intend to disparage all such treatment, but simply to record his own disappointment with it in connection with confirmed cases of calcaneus. He believed with Dr. Berg, that if certain nerve fibres still remained intact, they could be developed by appropriate treatment. He was also willing to admit that an operation which secured anchylosis or synostosis was capable of giving a very useful foot; but from what he had heard of the operation, there seemed to be good cause for doubting the permanency of the results. Besides this the operation was a much more formidable one than that which he had described in his paper, and it would often be impossible to secure the consent of the parents to perform it, while they would willingly agree to the other operation.

In regard to mechanical points raised by Dr. Judson, it must be remembered that in addition to the gastrocemius muscle, the perineal group and some of the interossei are also involved.

In only one of his cases had he met with the ribbon-like form of the tendon, and the result of this case is reported as "poor." When this condition exists, the tendon must be brought further down, and particular care exercised in the process of suturing, aiming to have the tendon well embedded in the V-shaped flap.

DR. PHELPS presented a specimen that was apparently an intracapsular fracture of the femur. It had been removed from a man in the dissecting room, who was noticed to have the legs flexed and abducted, and twenty or more sinuses, healed and unhealed, about the thigh, which had burrowed in every direction. Through a most unfortunate mistake on the part of those who secured the specimen, the soft parts were all carefully removed. The pus is stated to have come from a cavity behind the mass of new bone which is seen in the acetabulum; and the new joint is found to be perfect. When the specimen was exhibited a few evenings since before the Surgical Section, it was thought to be a case of old hip joint disease; but the specimen clearly shows, since sections have been made, that this is not the case, and is of peculiar interest as illustrating the utter impossibility of curing such a case by mechanical treatment. It was a strictly surgical case, and unless the sinuses were followed up and treated by thorough curetting and free drainage with antiseptic precautions, the man must have died, as he did die, from amyloid disease of the liver and kidneys.

DR. J. D. BRYANT concurred in the opinion that this was a case of intracapsular fracture.

A SIMPLE METHOD OF PREVENTING THE BREAKING OF PLASTER AND WAX CASTS.

DR. PHELPS exhibited two casts so treated. He said that in order to render plaster or wax casts almost unbreakable, it was only necessary to rub well the surface of the cast with plumbago, and then by the process of electro-deposition, cover the whole surface with a film of copper about 1 mm. in thickness. To illustrate the efficacy of this method, the speaker took one of the specimens, a large cast illustrating Dupuytren's Contraction, and threw it violently upon the floor, without its sustaining the slightest damage.

The other specimen had already been shown at the meeting in connection with Dr. Townsend's case of club feet.

PROF. EDUARD VON WAHL, of Dorpat, one of the editors of the *St. Petersburger medicinische Wochenschrift*, died on Jan. 29, in consequence of an accident he met with a short time ago, by which several of his ribs were fractured.

NECROLOGY.

Medical Director Adrian Hudson, U. S. Navy.

The medical corps of the navy has recently suffered the loss of one of its ablest and most estimable members in the person of the late Medical Director Adrian Hudson, who died at the U. S. Naval Hospital at Mare Island, California, of which he was in charge, on Friday, the 7th instant, after a few days illness from pneumonia, following an attack of "Grippe."

Dr. Hudson was born in Montreal, Canada, of an American father and English mother on Christmas Day, 1837, and was consequently only a little over fifty-two years old at the time of his death. He was educated at the McGill University, at Montreal, and entered the naval service as an assistant surgeon on the 30th July, 1861, his first duty (1861–62) being with the Mississippi Flotilla, where marked mention was made of his skill and gallantry. He was next attached to the steam gun-boat "Eastport," of the Mississippi Squadron (1863) and to the apprentice ship "Sabine" (1864–65). He was made Passed Assistant Surgeon June 22, 1865, and promoted to Surgeon on the 17th August of the same year. He served aboard the U. S. S. "Tuscorora," in the South Pacific Squadron (1866–67), and was stationed at Mound City, Illinois (1868–70). He was the Surgeon-of-the-Fleet on the North Atlantic Station on board the flag-ship "Ancestor" (1874–75), and stationed at the Navy-Yard, Washington, D. C. (1875–78).

In 1879 he was appointed Assistant to the Chief of the Bureau of Medicine and Surgery at the Navy Department, and on the 10th June, 1880, he was commissioned Medical Inspector. He was senior member of the joint Army and Navy Board, on which Dr. Billings represented the Army, to locate and establish the Army and Navy Hospital, at Hot Springs, Arkansas.

His last duty at sea was on board the flag-ship "Trenton," of the Pacific Station, from which, having been promoted to Medical Director, July 10, 1888, he was detached and ordered to the charge of the Naval Hospital at Mare Island, California, thus escaping the disaster at Samoa. At the time of his death he was President of the Naval Medical Examining Board on the Pacific Coast.

He became a member of the American Public Health Association in 1882.

Dr. Hudson was distinguished by high professional attainments and remarkable executive ability, and was an earnest advocate of higher medical education. His kindly disposition and genial nature won him hosts of friends in other corps as well as in his own by whom his loss has been very deeply felt.

Professor H. Frey.

The Zurich school boasted of few more accomplished biologists or effective teachers than Dr. Heinrich Frey, who having retired after forty years' active work, lived but a few months in enjoyment of his well-earned repose. He was born at Frankfort-on-the-Main on June 15th, 1822, and at twenty-five years of age had qualified by brilliant preliminary studies for the post of *Docent* in the University of Göttingen. In 1848 the medical faculty of Zurich nominated him Extraordinary Professor, and in 1851 Ordinary Professor, in both of which capacities he more than justified his appointment. In 1855 he undertook the Professorship in the Polytechnic of Zurich, and also the post of Director of the Microscopo-Anatomical Institute. From 1854 to 1856 he also filled the position of Rector in the "Hochschule" with the greatest acceptance. Over and above his official duties, his work in the physiological laboratory was unremitting, and in the books he published on physiology he evinced such independent and thorough research, and such clearness and felicity of style, that they speedily found a far wider public than that to which they were primarily addressed. They were translated, indeed, into nearly every European language, and still retain their value as models of scientific induction and lucid exposition, particularly the "Histologie und Histochemie des Menschen" and the "Mikroscop und die Mikroscopische Technik." Besides his proficiency in the studies bearing directly on on his special department, Professor Frey was one of the most accomplished entomologists of Europe, and his contributions to entomology are at once among the most voluminous and most valuable of their kind. He was corresponding fellow of a large number of learned and scientific bodies on both sides of the Atlantic, and had not ceased to contribute effectively to their Transactions when death removed him, in Zurich, on the 17th ult., in his sixty-eighth year. —*The Lancet.*

Dr. J. B. Halsey

died at Baker City, Ore., in December last. He was one of the pioneer practitioners who crossed the plains in 1865, to enter the eastern part of the Territory. Since 1875, he had had his home at Baker City.

Dr. George D. Norris

died at Newmarket, Ala., aged 78 years. He was formerly Professor of Anatomy in the Baltimore Medical College. He was a graduate from Maryland University nearly sixty years ago, and had been a resident of Newmarket for more than half a century.

BOOK REVIEWS.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1889.

This report from Surgeon-General John B. Hamilton is unusually voluminous and is replete with interesting matter. The United States Marine-Hospital Service, says Dr. J. B. Lindsley in his address before the American Medical Association last June, "has altogether outgrown its name and should be styled the United States Public Health Service." It has already successfully administered the affairs of maritime and interstate quarantine, furnished aid to sufferers from epidemics, and accomplished much good work in the line of scientific research. How satisfactory has been the character of the work accomplished by this service is witnessed in the complimentary resolutions (relative to the management of yellow fever) adopted by the Florida Legislature.

Among the many points of interest in the present report of the Surgeon-General is the concluding portion of the report of the yellow fever epidemic in Florida. This contains clinical records of a number of cases treated at Camp Perry; a general history of the epidemic is also given. An interesting paper appears on the subject of chagres fever. Considerable space is given to a description of quarantine appliances recently introduced in the service. The director of the hygienic laboratory, Assistant Surgeon Kinyoun, reports that a lengthy series of experiments in quarantine disinfection is about completed, and bacteriological investigations of various diseases are receiving much attention. Special investigations are also being made of Weigert's method of treating tuberculosis; the rôle played by the hands of nurses and assistants in the infection of wounds; of tuberculosis; of the pathogenesis of anaerobic microbes, etc. The report of Dr. Geo. Sternberg upon "The Prevention of Yellow Fever by Inoculation, Made in Compliance With Instructions from the President," gives a detailed account of the investigator's researches in Brazil, Mexico and Cuba, together with a reply to the charges made against Dr. Sternberg and Dr. Góes (of Rio de Janeiro) by Dr. Freire.

A number of selected cases from hospital practice and numerous reports of autopsies add greatly to the interest of the volume.

It is to be hoped that the day is not far distant when a public health department, adequate to the needs of the country, shall be established, and it is believed that it is the sentiment of the medical profession that the establishment of such a department with a Cabinet Minister at its head has already become a pressing necessity.

A Text-Book of Human Anatomy, Systematic and Topographical, including the Embryology, Histology and Morphology of Man, with special reference to the requirements of Practical Medicine and Surgery. By Alexander Macalister, M.A., M.D., F.R.S., F.S.A., Professor of Anatomy in the University of Cambridge and Fellow of St. John's College. With 816 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

The well known publishing house of P. Blakiston, Son & Co. have rendered valuable service to the medical profession of this country by bringing out an American edition of this valuable text-book. The volume is evidently a work of years. It was hardly necessary for the author to write that "the descriptions here given have been written in the dissecting-room, and checked over and over again by comparison with dissections." The evidences of original observation are manifest on every page. It deals briefly with the evolution of form; describes the nature and arrangement of tissues, and then passes to the study of the bones, the joints and the soft parts in the order in which they are to be considered in the dissecting-room.

Every organ and structure of the body is described with extreme fidelity, and the student of anatomy with this book in hand is well equipped for whatever work he has in hand. The illustrations are ample and beautiful and the text well suited in every respect to assist the student, and will prove an admirable book for reference.

In this volume of 750 pages students and physicians will find an unfailing guide in the prosecution of dissections and a book of ready reference in all anatomical matters. Whatever other works may be upon the shelf, this text-book added to the list will repay the investment.

SOCIETY NEWS.

ILLINOIS STATE MEDICAL SOCIETY.

Change of Date of Meeting.

Important Notice.

The annual meeting for 1890 will be held in Chicago the first Tuesday of May, instead of the *third* Tuesday. This change is made on account of the meeting of the American Medical Association in Nashville on the latter date.

John Wright, President.
J. P. Mathews, Vice-President.
D. W. Graham, Perm. Secretary.
C. W. Earle, Ch'n Com. of Arr.

MISCELLANY.

LETTERS RECEIVED.

Dr. B. F. Harris, Langford, S. Dak.; Dr. L. L. McMurtry, Louisville, Ky.; Geo. P. Rowell & Co., New York; Dr. Jules Rouvier, Beyrouth, Syria; B. Westermann & Co., New York; The Drevet Manufacturing Co., New York; Dr. R. J. Dunglison, Philadelphia; Dr. A. P. Clarke, Cambridge, Mass.; Dr. Leartus Connor, Detroit, Mich.; Dr. R. M. Wyckoff, Brooklyn; Dr. A. Reeves Jackson, Chicago; Dr. E. P. Johnson, Norristown, Pa.; Dr. C. H. March, Wheeler Springs, Ark.; W. F. Holloway, Cuyahoga Falls, O.; Dr. Boesler, Peninsula, O.; Dr. Luis Ezpelosin, Caracas, Venezuela, S. A.; Dr. S. T. Armstrong, Cleveland, O.; Dr. J. A. Allen, Chicago; Stanley Day, New York; Dr. Chas. B. Penrose, Philadelphia; McKesson & Robbins, Maltine Manufacturing Co., New York; Dr. O. H. Haven, Youngstown, O.; Dr. Hal. E. Lyman, Detroit, Mich.; J. Walter Thompson, New York; Horlick's Food Co., Racine, Wis.; Farwell & Rhines, Watertown, N. Y.; W. F. Holloway, Cuyahoga Falls, O.; Geo. S. Davis, Detroit, Mich.; Dr. L. H. Wood, Highlands, Col.; The National Magazine, Chicago; Dr. R. C. Davis, Ann Arbor, Mich.; The Subscription News Co., Chicago; J. H. Bates, New York; N. Murray, Baltimore, Md.; Dr. E. Cutter, New York; Dr. J. C. Vincent, Allegheny, Pa.; Dr. D. F. Morris, Hoemisville, Neb.; Dr. N. Abel, Providence, R. I.; Dr. Richard Douglas, Nashville, Tenn.; Tri-State Sanitary Association, Mansfield, O.; Dr. J. E. Shadle, St. Paul, Minn.; Coronado Water Co., Coronado, Cal.; Dr. C. L. Lewis, New York; Dr. Thos. McIlwain, Marion, Ind.; American Pharmaceutical Association, Bridgeton, N. J.; Dr. W. B. Fletcher, Indianapolis, Ind.; Dr. J. F. Jelks, Hot Springs, Ark.; Parke, Davis & Co., Detroit, Mich.; Dr. D. N. Raukin, Alleghenv, Pa.; Dr. David S. Booth, Jr., Belleville, Ill.; Galvano-Faradic Co., N. Y.; P. J. Mitchell, Philadelphia; "The Nightingale," New York; Dr. Chas. P. Lyman, Boston, Mass.; J. K. Miles, Philadelphia; Dr. R. C. Davis, Ann Arbor, Mich.; Dr. Chas. W. Earle, Chicago; Dr. Wm. O. H. Danforth, Worcester, Mass.; F. C. Vose, Brooklyn, N. Y.; Dr. A. B. Carpenter, Cleveland, O.; Dr. E. F. Cordell, Baltimore, Md.; Allen & Yates, Buffalo, N. Y.; Dr. R. H. Goodier, Hannibal, Mo.; Dr. H. F. Hazlett, Philadelphia; The Microscopic Journal, Trenton, N. J.; Dr. J. W. Long, Bryan, O.; Dr. A. M. Vail, Rock Rapids, Ia.; P. Blakiston, Son & Co., Philadelphia; Dr. S. K. Giffon, Haverford P. O., Pa.; Dr. J. Ohage, St. Paul, Minn.; Cincinnati Sanitarium, Cincinnati, O.; Chas. H. Philips Chemical Co., New York; Paris Medicine Co., Paris, Tenn.; Cranston & Co., Norwich, Conn.; E. B. Treat, New York; Dr. Harold Moyer, Washington, D. C.; Medical Herald Co., St. Joseph, Mo.; Reed & Carnrick, New York; George F. Lasher, Philadelphia, Pa.; Dr. J. E. Kendall, Parkersburg, W. Va.; Dr. N. D. Gueirry, Trinity P. O., Miss.; Thomas F. Goode, Buffalo Lithia Springs, Va.; Dr. F. W. Mercer, Chicago; Dr. Mary B. Tuttle, Burlington, Ia.; Drs. McKaskey and Love, Hamersville, O., Dr. M. H. Sears, Leadville, Col.; W. T. Keener, Chicago; J. W. Brown, Mottville, N. Y.; Dr. H. H. Foster, Delavan, Ill.; Dr. J. H. Smith, Dallas, Tex.; Carl Jenson, New York; L'Union Médicale du Canada, Montreal, Can.; Battle & Co., Century Chemical Co., St. Louis, Mo.; Dr. F. Johnson, Norristown, Pa.; Dr. Maris Gibson, Wilkesbarre, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 15, 1890, to February 21, 1890.

Lieut.-Col. J. R. Smith, Surgeon, is granted leave of absence for twenty days, to take effect about February 10. Par. 1, S. O. 15, Hdqrs. Dept. Ariz., February 8, 1890.

PROMOTION.

Asst. Surgeon Henry I Raymond, U. S. A., to be Asst. Surgeon with the rank of Captain; after five years' service, in accordance with the Act of June 25, 1874.

RETIRED.

Col. Andrew K. Smith, Surgeon, February 9, 1890. Act of June 30, 1882.

THE

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ORIGINAL ARTICLES.

TUMORS OF THE OPTIC NERVE, WITH REPORT OF TWO ORIGINAL CASES.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY S. C. AYRES, M.D.,

OF CINCINNATI, O.

Diseases of the orbit present a very interesting group. They are very numerous, considering the size of the orbital cavity and its somewhat isolated location. Here we find tumors malignant and non-malignant originating in the orbit itself, in the optic nerve, in the globe, and afterwards invading the orbital cavity, as well as growths from the nasal fossæ and the cerebrum, which encroach on it from different directions. Each one of these subjects might well command our earnest attention, but I propose to mention one class only, tumors of the optic nerve. They are comparatively rare, there being at present less than seventy cases on record. With your permission I will give a hasty résumé of the literature at my command on the subject, and then give in detail the two cases which have come under my observation.

In Vol. xxv, Graefe's Archiv, Dr. Willemer, of Göttingen, reports twenty-two cases which had up to this time been reported. These include nine cases already reported in Vol. xix by Dr. Goldzieher, of Heidelberg, three of which he had himself operated on. He adds as an appendix five more cases, making twenty-seven in all. He gives a full and concise description of them macroscopically and microscopically, and an exhaustive statement of the various questions relating to growth, development, pain, probability of return, etc. It is a very comprehensive paper, and will well repay any one interested to read it carefully. Beginning with the case reported by Heymann in 1842, he gives in detail all the cases by Rothmund, Graefe, Sichel, Jr., Horner, Brailey, Goldzieher, Gruening, Leber, Alt, Mauthner, Holmes, Forster, Laquer and others, and gives in detail two cases observed by himself.

Dr. A. Vossius, of Königsberg, in Graefe's Archiv, Vol. xxviii, part iii, adds a contribution to the knowledge of the true optic nerve tumors, *i. e.*, those developed within the external sheath. He says in substance as follows:

Among the twenty-seven real optic nerve tumors described by Willemer, A. f. O., Bd. xxv, 1, the sarcomata play the leading rôle. These were partly fibro, partly glio-sarcomata, and most of them were combination tumors mixed with myxomatous tissue. Fourteen cases, or 52 per cent., were of sarcomatous character; six cases, or 23 per cent., were myxomatous; five cases, or 15 per cent., were fibromatous; one case was described as a scirrhus carcinoma, and one peculiar case was neuroma verum. The classification of all these cases has been very arbitrary, especially those described as myxomata and fibromata.

Imperfect methods of examination were the reason for inexact classification of tumors which were observed in past years. Pure myxoma and fibroma may be considered a rarity.

The size and consistency of the tumors vary; the more myxomatous tissue they contain, the softer they are. The external sheath surrounded the tumor in its entire extent, with but slight change in its structure; the external sheath and the tissue of the intervaginal space were chiefly involved. The optic nerve itself showed a variety of conditions; it lay either unchanged in the middle, or more or less eccentric in the tumor substance. On the other hand it was recognizable only at its commencement near the eyeball, while near the middle of its course it was completely lost. Usually only one eye was affected; in rare cases an extension of the tumor involved the intracranial part of the nerve as far as the chiasma. A case of von Graefe's is recorded where both nerves and the chiasma were almost completely involved in a tumor which extended backwards to the pons.

In a case of Leber's there was found a multiple knotty swelling of the optic nerve in a normal appearing eye, the cause of which was a tumor of the same character in the other eye, for which the first eye was enucleated.

The years of childhood appear to be especially predisposed to the growth of these tumors; as is likewise the case with the development of glio-sarcomata of the retina, it is probable that both these varieties of tumors take their origin during fœtal life. Heredity has never been proven in

the case of these tumors, yet very frequently their discovery soon after birth gives reason to suspect such an origin. Trauma is frequently the cause, both in childhood and in adult years.

The first and constant symptom of true optic nerve tumors is exophthalmos, with slow and painless development. The motions of the eyeball are not affected until late, because the muscles are not involved, and because no attachment takes place between the surfaces of the eyeball and tumor. A second important symptom is an amaurotic condition of the eye. A suppurative keratitis sometimes results from the exophthalmos, and finally a degeneration of the entire eyeball.

A return of the tumor following enucleation has seldom been observed. Five cases are reported of death following soon after enucleation from meningitis, and two cases of death after an interval of several years from propagation into the brain.

The first case reported by Vossius was in a boy 2½ years old. The parents say that a few weeks after birth a peculiar appearance of the left eye was noticed; within a year commencing exophthalmos was noticed. The papilla was very much swollen, of a whitish color, and the vessels very tortuous. The eye and tumor were removed. Microscopic examination proved the growth to be a myxosarcoma, and it was located in the intervaginal space.

His second case was in a boy 8 years old. Exophthalmos is said to have arisen the previous year after an attack of whooping-cough. There was white atrophy of the disc without indication of a previous neuritis. Two years later a firm elastic swelling could be felt below and behind the eyeball. Motion of the eye downward and outward was defective. Antero-posteriorly the tumor measured 42 mm., the greatest height 22 mm., and width 27 mm. The arachnoid sheath was thickened, but the chief part of the tumor arose from the tissue of the intervaginal space. A strip of hæmorrhage existed around the periphery close under the dural sheath. The color of the periphery was a moss-green, while the middle was yellowish and lighter. A longitudinal section of the tumor mass shows an intricate fibrous network with numerous cells and more or less coarse connective tissue; occasional groups of myxomatous masses, among which were strongly colored balls and knotty masses; no nerve fibres.

In Graefe's Archiv., Vol. xxxiv, 1888, Prof. Dr. Schiess-Gemuseus reports a case of total myxosarcoma of the optic nerve removed with retention of the eyeball. It was in the person of a girl 12½ years of age. In childhood her parents noticed that she could not open the right eye quite as wide as the left, but recently it has become larger than its fellow. The ball is also turned downwards and outwards. Vision is reduced to $\frac{6}{\frac{1}{2}}$ and the optic nerve presents a pronounced choked disc. In September, 1885, three months after her first visit to the clinic, vision had been reduced to $\frac{6}{\frac{1}{11}}$ and a hard tumor could be felt with the finger between the ball and the upper edge of the orbit. He decided to try to remove the tumor and save the globe. The operation was a brilliant success and the girl still retains the eye, and so far there has been no reproduction of the tumor. The tumor has the shape of a rounded spindle, is completely surrounded by a dense connective tissue capsule, which is merely the external membrane of the optic nerve sheath. It was sausage-shaped, surrounded the nerve and pressed upon the eyeball, and was cut off close to the eyeball. At the rear end it pressed close upon the optic foramen; the length of the nerve enclosed within the tumor was 37 mm.; the transverse diameter close to the ball was 13 mm.; its greatest diameter was 20 mm. The surface of the tumor was covered with numerous smooth elevations and depressions; the covering membrane was easily removable from the substance of the tumor. A bile-like substance filled the tumor, resembling more a secretion than a tissue. Microscopically the tumor shows a number of circular or rod-shaped nuclei, with here and there some fine free fat cells. The whole seems to be composed of a more or less dense fibrous mass of uncommonly long, fine, delicate fibres, most of them containing somewhat oblong nuclei, others more round and occasionally quite long, rod-like nuclei; in general, each fibre contained one nucleus. The dural membrane encloses the tumor with an average thickness of $\frac{6}{\frac{1}{6}}$ mm.; processes extend into the body of the tumor from the dural sheath. The optic nerve fibres are everywhere sharply defined from the fibres of the tumor. The tumor is developed between the inner and the outer nerve sheaths. The thickness of the pial membrane varies from 0.6 to 0.12 mm. The integrity of the optic nerve is remarkably preserved; no trace of fatty degeneration.

Conclusions.—The pathological-anatomical examination shows with certainty that the tumor is not a neuroma, and that the nerve in its pial sheath is nowhere involved, the tumor being developed between the pial and dural membranes. Penetrating all through the fibrous structure of the tumor are very numerous blood-vessels having very thick walls. In many places there are peculiar œdematous spots. The growth of the tumor around the nerve was not everywhere equal in thickness, the nerve lying in some parts of its course against the dural sheath, in others in the middle of the tumor. The tumor has much similarity to those described by Willemer and Vossius as myxosarcomata (A. f. O., Bd. xxv and Bd. xxviii). The great vascularity and the thickness of the vessel walls are very charac-

teristic; the entire tumor must have originated with a slow growth from the fibres of the arachnoid. It is remarkable to find the optic nerve retaining so nearly its normal condition, surrounded as it is intimately by a growth of such size and character. The pial sheath is broken through by the growth of the tumor in only a few places. The macroscopical form is similar to those described by Willemer and Vossius—spindle-form; the contents a soft, oozing mass.

The pathological-anatomical condition explains fully the reason of the varying state of the vision during the development of the tumor. The nerve, surrounded as it was by a soft, very vascular mass, suffered occasional compression, in consequence of which the choked disc was to be seen with the ophthalmoscope.

The present case is especially interesting owing to the preservation of the eyeball. Knapp was the first who removed a similar tumor without sacrificing the globe, but the eyeball was lost later through suppurative keratitis. Dr. Gruening, however, had a successful case, but the tumor was a small one (size of a hazelnut) and situated close to the eyeball.

Mr. Geo. Lawson, in the Royal London Ophthalmic Hospital Reports for January, 1888, reports a case of tumor of the optic nerve, which he says is the third one which has occurred in his practice.

In the reports of the hospital for August, 1882, is the first case. Here he says that "tumors of the nerve are comparatively rare and may occur in two ways: First, they may be external to the nerve fibres and spring from the dural sheath of the nerve; second, they may grow from within the nerve, being intimately associated with the connective tissue between the nerve fibres and constituting a neuroma." He then reports and illustrates a case where the growth originated from the dural sheath of the nerve. In the same number of the Reports is a case of so called "spurious neuroma" of the optic nerve, reported by Mr. J. W. Hulke. He says "that post-ocular intra-orbital tumors of the optic nerve and of the sheath are of such rare occurrence that the following case appears worthy of permanent record. The extremely slow rate of increase of the proptosis, indicative of correspondingly slow growth of the tumor, and the relative freedom of the movements of the eyeball, together with the normal appearance of the fundus oculi, had inclined me to regard exostosis as the most probable cause of the proptosis, and to reject as improbable a sarcoma or carcinoma of the orbital walls or optic nerve. This, however, proved erroneous."

The case is as follows: Caroline, æt. 19, a thoroughly healthy-looking brunette, was admitted on July 6, 1881, into the Middlesex Hospital. She had extreme proptosis of the right eyeball to the extent that even with a strong effort she could not close the eyelids, and sometimes in the attempt they slipped behind the eyeball. This occasionally happened in the act of winking, and it was so painful to her, and the effect so distressing to those about her, that she shunned society and was rendered more unhappy by this than by the loss of sight. The eyeball moved consensually with the other, and nothing unnatural could be felt within the borders of the orbit by pressure through the eyelids. Vision was reduced to quantitative perception of light. With the ophthalmoscope nothing unnatural was discernable in the optic nerve or retina. The external aspect of the eyeball was perfectly natural.

History.—An elder sister who accompanied her said that the unnatural prominence of the eyeball began to be noticed in her sixth year, and that its increase has been very gradual and unattended with pain, but with progressive loss of sight.

The eyeball and the tumor were therefore removed together, the optic nerve being severed close to the foramen opticum. The tumor was firm, of a spherical outline, in size about one-third less than that of the eyeball, from which it was separated by a portion of seemingly healthy optic nerve somewhat more than half an inch long. The extremely slow growth of the tumor (dating its beginning from the time when the protrusion of the eyeball was first noticed) is a remarkable circumstance, and one well calculated to lead to a mistake in diagnosis.

Structure.—The short piece of nerve that intervenes between the eyeball and the tumor is folded on the latter in such a way that the two bodies lie almost in apposition. Except for some thickening the dural sheath passes unchanged over the mass, but the loosely arranged fibres of the intervaginal space are enormously increased in the neighborhood of the entrance of the nerve into its front part. They also bear far more nuclei than normal. Towards the center of the tumor they gradually become replaced by an imperfectly fibrillated tissue containing numerous cell elements, of which the majority are small, perhaps .005 mm. in diameter. All gradations of size are found up to the largest, which are .026 mm. in diameter, oblong, and perhaps slightly drawn out at the ends, with several dot-like nuclei and numerous granules. The pial sheath and nerve fibres lose themselves in approaching the center of the tumor. The new growth appears to be a sarcoma taking its rise in the loose tissue of the intervaginal space, most probably from the nucleated cells found upon its fibres.

In the journal referred to above Mr. Lawson says: "Tumors of the optic nerve behind the eye, but within the orbit, are rare. In my own practice this is only the third case I have had. The first case was recorded in the Ophthalmic Hospital Reports, Vol. x, p. 296; the second in the fifth edition of my 'Manual of Diseases and

Injuries of the Eye,' p. 238; and the third is the case I have now to relate. In each of these the eye was blind.

"The symptoms in the following case were sufficiently pronounced to enable me to suggest that the growth in the orbit was probably a tumor of the optic nerve behind the eye. They were: A protrusion of the eye downwards and forwards, but the proptosis of only a moderate degree; steady loss of sight, first noticed with the commencement of the proptosis and terminating in complete blindness.

"The prominent symptoms which seem to indicate tumor connected with the optic nerve are proptosis, with early impairment of vision. The loss of sight in orbital tumors not connected with the optic nerve is caused either by the stretching of the optic nerve from the proptosis, or by the pressure of the growth on the nerve. There is seldom complete blindness unless the growth by its size has destroyed the functions of the optic nerve either by pressure or stretching. In this patient the defect of sight was an early symptom, which progressed to blindness before there was a sufficient stretching of the optic nerve to account for it, or a large enough growth in the orbit to produce it by pressure. Lastly, with the ophthalmoscope there was seen white atrophy of the optic nerve, with enlarged retinal veins, evidently due to the pressure of a tumor on the nerve, and, from its comparatively small size, probably directly connected with it.

"Edward R., æt. 12, admitted July 25, 1887.

"*History.*—Two months ago his left eye was first noticed to be 'larger' than his right; since that time it has gradually increased and the sight has gradually failed in it. He has not had any pain in the eye, but headache, frontal and behind the ear on his left side at times.

"*State on Admission.*—Left eye proptosed and misplaced forwards and downwards; movements of eyeball good. At the upper and inner part of the orbit is felt a hard mass extending backwards in close contact to the roof of the orbit. There is no nasal obstruction or deafness, no posterior palatine growth, and no glandular enlargement. He has no perception of light with the left eye; the pupil is inactive to light. By ophthalmoscopic examination the disc is seen to be white and the margin blurred, the veins big and tortuous and obliterated in places near the margin of the disc. T. n. The right eye is normal.

"He introduced a speculum between the lids and excised the eye with the tumor around the nerve *en masse*. Behind the globe, which upon examination presented nothing unusual, was a tumor surrounding the optic nerve and extending backwards from the sclerotic a distance of 23 mm. In its widest part its diameter was 18.5 mm. Irregularly pear-shaped, with the smaller end forwards and with a lobulated surface, it was entirely enclosed in the optic nerve sheath. At the posterior limit of the growth, where the nerve emerged, it and the sheath were in contact, but the nerve was somewhat thickened. The tumor was fairly firm to the touch, and near its anterior end were felt one or two small cysts beneath the capsule.

"*Microscopical Examination.*—The new growth is a sarcoma of loose connective tissue type, which in parts is undergoing myxomatous degeneration. In those parts which are apparently free from this change the stroma is finely fibrous and forms in places a delicate reticulum resembling that met with in lympho-sarcoma, with this difference, that there are no cells in the meshes. Throughout the growth the cells are very loosely arranged and there are no clumps of cells, such as are usually met with in the true myxo-sarcomata. The cells are round and oval, but the former largely predominate. No spindles were found. There are numerous small areas of myxomatous degeneration, but in no section were there found the translucent spherules described in tumors like this one by Vossius, Leber and others. A few vessels in the growth show marked hyaline degeneration of their walls, which are greatly thickened and their lumen almost obliterated; but in none of the sections examined were there any hyaline appendages to the degenerated vessels.

Scattered through the optic nerve are large numbers of cells, which are identical in appearance with the cells of the new growth. The nerve fibres show little if any change, but the trabeculæ are thickened. The pial sheath can be traced unbroken over the thickened nerve, but it is being invaded by the tumor cells. The dural sheath, which is but loosely attached to the tumor, is not implicated. Though it is impossible to tell with certainty the site of origin of the tumor, it is most probable that it grew from the connective tissue of the inner sheath, or from the loose tissue of the intersheath space."

Wolfheim, in his inaugural dissertation, December, 1887, Königsberg, collects together the cases of tumors of the optic nerve which have up to that time been published (42 cases up to 1884). He adds to them those of which up to this time no mention has been made since 1884. He gives a detailed account of a new case, so that the total number of published cases amount to 61. The sarcomata were the most numerous, amounting to 49.

The new case was as follows: It was in the person of an eight-year-old boy, in whom the left eye had become gradually more prominent. There was pronounced swelling of the papilla. On the temporal half of the papilla, at the junction of some small blood-vessels, lay three small, round hæmorrhages. Digital exploration of the orbit revealed a firm tumor probably connected

with the optic nerve, of an irregular surface, which extended back to the region of the optic nerve. The optic nerve was severed close to the optic foramen and removed with the globe.

The tumor began 7 mm. behind the globe and presented a post-horn shaped outline. The length of the growth was 27.5 mm., its breadth 21 mm., and its height in the middle 24 mm. The growth was covered with a strong capsule, which constituted the immediate continuation of the dural sheath of the optic nerve. When incised it presented a homogeneous appearance. The result of the microscopic examination showed it to be a genuine spindle-celled sarcoma with partial myxomatous degeneration. At the same time it was very vascular and filled not only the sub-dural space, but had extended from the pial sheath into the nerve itself, and apparently had inserted itself in the trabecular, projecting into the trunk of the nerve.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, December 10, 1887, Dr. George E. Frothingham reports two cases of tumor of the optic nerve occurring in young people, one a lad of 7 and the other a girl of 17. In both the eyes were enucleated with the tumors. In one case there was a papillitis, in the other there was not.

In the case of the boy the tumor involved the entire substance of the optic nerve from the foramen to the globe. It was $1\frac{5}{8}$ in. in its long, and $1\frac{1}{16}$ in. in its short diameter. In the other case it was not quite so large, and the ocular end of the nerve was free for about half an inch. Both were round-celled sarcomata. No return to date.

In the *American Journal of Ophthalmology*, Vol. i, 1884, p. 243, Dr. Aub reports a case of myxosarcoma of the optic nerve. It was in the person of a married woman, age not given. The microscopic examination was made by Dr. Alt, of St. Louis. He says it consists chiefly of spindle-shaped and stellated cells. In many parts of the growth the mucoid substance is accumulated in the form of smaller and larger cysts of irregular and round shape.

I come now to the first of my own cases: J. D., æt. 12, was seen for the first time July 18, 1886. He said the right eye had been amblyopic since last spring. There was no history of trauma and he had not suffered any pain, but had continued in school all the time until impairment of vision and probably diplopia had attracted his attention to the eye. There was a slight exophthalmos and vision was reduced, T. 1. The mediæ were clear. There was well-marked optic neuritis, the disc was swollen and quite prominent, and the vessels upon it obscured. Vision was reduced to the perception of shadows of the hand outwards and downwards. As there was no reason to suggest or recommend an immediate operation, I put him on a course of kali. iod. and ordered him to come back again in a month.

In August his vision was slightly better; he could count fingers at one foot. I saw him again in October, and his vision had improved to counting fingers at five feet. The swelling of the optic disc had subsided considerably, but there were evidences of optic nerve atrophy coming on.

I did not see the patient again until April 5, 1888. At this time there was a marked change in the appearance of the eye. Vision was entirely obliterated and there was atrophy of the optic disc. There was proptosis of the eye, and a tumor or growth of some kind could be felt in the upper and outer portion of the orbit. It felt firm but somewhat elastic. Motility of the eye was unimpaired. April 9th I made the operation, hoping that I might be able to remove the tumor and save the globe. I made a free incision through the conjunctiva parallel with the external rectus muscle, and then another incision close to the cornea at right angles to it, severing the external rectus muscle, leaving a little stump attached to the sclera, in case I should want to unite the cut ends of the muscle. After passing my finger along the tumor and exploring its location and size as well as I could, I became convinced that it would be impossible to save the globe and remove the tumor.

I then proceeded to remove the globe and afterwards the tumor. There were no special difficulties in the case and the globe was severed close to the optic foramen.



Macroscopic Appearance.—The tumor was spindle-shaped, or rather sausage-link shaped. It was quite regular in outline and was enclosed in a thick, firm capsule. Its outer surface presented a wrinkled or corrugated surface. It was 28 mm. in length, and 20 mm. in diameter at the thickest portion. It was quite firm and solid.

Microscopical Examination by Dr. James M. French.— Preparatory to microscopic examination, the specimen was hardened in Müller's fluid and absolute alcohol. Sections were then cut $\frac{1}{50}$ inch in thickness and part of them stained in hæmatoxylin, part in alum-carmine.

On examination the growth was found to be a sarcoma of the small round-celled variety, very vascular and in some parts supported by an abundance of fibrous tissue, but for the most part exhibiting a large amount of mucoid tissue, and consequently belonging to the class designated "myxosarcomata."

The tumor mass completely surrounded the optic nerve, which still remained visible, even to the unaided eye, at a point near the centre of the transverse section. The small round cells which constituted the most striking feature of the growth were of nearly uniform size, measuring from about 3.5 mm. to 5.0 mm., each containing a distinct nucleus and more or less granular protoplasm. The intercellular spaces are filled by a colorless, translucent substance, in some parts amorphous, but in most parts marked by an exceedingly delicate fibrillation. In the more translucent regions were found in considerable numbers the indistinct fusiform and stellate cells with long, delicate prolongations characteristic of mucoid tissue.

Fibrous tissue bands of variable width subdivided the neoplasm into numerous compartments of varying form and size, but never very large. In these the cells rested without definite arrangement. The fibrous tissue is everywhere very vascular. In some places the blood-vessels are of large size with firm muscular walls; in others mere spaces without defined walls. As in all sarcomata, these blood-spaces are abundant in the cellular portion of the tumor, appearing like narrow channels washed through the mass of cellular tissue. Along the course of the blood-vessels, particularly those of comparatively large size, pigment has been deposited, partly as a diffused yellow-brown stain, partly in a granular form. In some places this discoloration is decided, in others but very slight.

The optic nerve was found invested in a much thickened pial sheath which completely separated it from the surrounding neoplasm. The nerve had, however, undergone marked degenerative change. The fibrous tissue envelope of the nerve fibres (neurilemma) had undergone a decided thickening (sclerosis), producing an equally decided atrophy on the nerve fibres. Scattered throughout the substance of the nerve were a large number of amylaceous bodies, some of which were intact and exhibited the characteristic parallel lines, others had been fractured, probably in the preparation of the specimen.

The tumor had for its envelope the external fibrous sheath of the optic nerve. This had, however, undergone decided thickening, and was so loosely attached to the neoplasm that a considerable portion of it was unavoidably detached in the preparation of the specimen for microscopical study. In addition to the increase in thickness of this sheath, there was a very manifest increase in the number and size of the blood-vessels. Numerous pigmentary deposits were also found, and in a few places cyst-like openings. In some portions there were also evidences of the extension of the neoplasm into the meshes of the fibrous tissue; it was nowhere found, however, to have involved the entire thickness of the sheath.

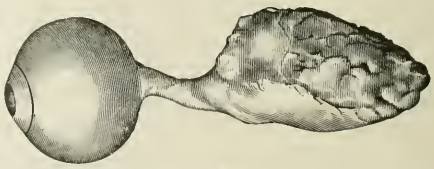
The appearances obtained from a longitudinal section of the growth were not materially different from those just described. The alveolar spaces, if such they could be called, presented a little greater average length, showing that the bands of fibrous tissue forming their walls to a certain extent followed in its course the long axis of the growth.

The fibrous tissue envelope of the neoplasm was found to be continuous at the extremities of the tumor with the dural sheath of the nerve, thus supporting the supposition that the growth originated in the connective tissue of the nerve sheath. There has been no return of tumor up to date.

My second case was in the person of a young lady. Miss Nellie S., æt. 22, a strong, well developed young woman in excellent health, when 8 years old fell while playing on the ice and struck the back of her head. She was insensible for a short time and there was tenderness in the back of the head which continued for three months afterward. About two years later she had an attack of malarial fever; there was some swelling and œdema of the lids, and while testing her vision she discovered that her right eye was nearly blind.

I saw her first in 1880, about seven years after the accident above referred to. At that time there was atrophy of the optic disc and vision was reduced to *nil*. There was a slight prominence of the eye and a slight divergence. There was no pain, and the eye gave her no inconvenience except from loss of vision.

I have seen her from time to time up to the present year, and there has been a gradual increase in the prominence of the eye. There have also been shooting pains occasionally in the orbit and in the right side of the head, which have increased recently. The eye now stands about 7 mm. in advance of its fellow. The motions are perfect in all directions, and it is not possible to detect any tumor by pressing the finger between the walls of the orbit and the globe. The ball cannot be pressed into the orbit.



I made the operation March 9th, 1889. After severing all the muscles, I found that the growth was very firmly attached to the apex of the orbit and it was with some difficulty that I detached it. It came out entirely, leaving the bony wall of the orbit smooth. There was a mild orbital cellulitis following it but it seemed to subside quietly and

she returned home in about ten days. After her return home she seemed to do well for about two weeks when she was attacked with typhoid fever from which she died about six weeks after the operation.

Macroscopical appearance of the tumor: It was triangular, or rather irregularly pyramidal in shape. The base of the pyramid was attached to the inner wall of the orbit. The growth was enclosed in a strong capsule which presented a uniformly smooth surface except inward where there were three small elevations or nodules. It appeared as if the tumor had made an attempt to perforate the capsule at these points. The optic nerve was not involved for a distance of 8 mm. from the globe. The base of the tumor (the portion attached to the bone) measured 25 mm. in length and 14 mm. in breadth. The surface measurement of the tumor on its longest side was 40 mm. and its shortest 20 mm. It measured 20 mm. in thickness. Macroscopically it presented a pinkish grey color and was of homogeneous consistency.

Microscopical examination: The specimen after being thoroughly hardened was first cut transversely at a point near its middle. Ocular examination of the cut surface revealed an almost homogeneous mass: a few linear subdivisions were however visible on close inspection. No evidence of the optic nerve could be discovered. The tumor was enveloped in a thin fibrious capsule which was manifestly continuous with the external sheath of the optic nerve projecting from its extremity.

Microscopic examination showed that the tumor was a myxo-sarcoma, the cellular elements of which were of the small spindle variety. The cells throughout the greater part of the section were closely aggregated with a very little intercellular tissue, and this was for the most part amorphous in character. The growth was however sub-divided into numerous small and very irregular compartments by delicate bands of fibrous tissue. These supported blood vessels of embryonic character. Similar blood-vessels or channels were visible throughout the cellular masses. The growth was not however remarkable for its vascularity. The course of the spindle cells was peculiar and interesting. In some portions of the growth cells were seen which had been cut longitudinally and therefore appeared as perfect spindles, and in other portions, as is usually the case, cells had been cut obliquely or transversely, causing them to appear oval or round.

In one portion of the growth corresponding to the central region of the tumor, there was a peculiar circular or whorled arrangement of the cells. The center of these whorls was found to be the axis cylinder of an optic nerve fibre. These fibres were found so widely separated that the space occupied by the remains of the nerve was more than four times the normal diameter of the optic nerve. The nerve fibres had undergone marked atrophy. Numerous amylaceous bodies were also present in the same region of the tumor. The pial sheath of the optic nerve had been so incorporated with the new formed tissues, or so completely replaced by them as to be indistinguishable.

In the longitudinal sections the appearances were not materially different from those observed in the transverse cut, so far as the neoplasm was concerned. There was abundant corroborative evidence of the persistence of nerve fibres in the region of the growth that has been described. The mucoid tissue seen in the transverse section was even more apparent in the longitudinal, resembling in some parts broad bands of translucent tissue with a few nucleated cells and in some instances surrounding small islands of neoplastic cells.

The external sheath of the growth was found to be continuous with that of the optic nerve and there was no evidence of its having been invaded by the disease.

The two cases I have observed resemble several of those already reported but especially those of Schiess-Gemeseus and Mr. Lawson. In the case of the former however the macroscopic appearance was very unlike that of most if not all of the cases. He says that a bile-like substance filled the tumor, resembling more a secretion than a tissue. In nearly all the cases the tumor was firm and elastic if not quite solid.

I have added to the sixty-one cases reported by Wollheim, six new cases, viz.: one by Mr. Lawson; two by Frothingham; one by Aub, and two from my own practice. All of these but one (that by Aub) occurred in young persons, and in this one the age is not given.

Two of these six cases may be classed with the sarcomata, and four with the myxo-sarcomata. The number reported to date do not furnish sufficient data from which to draw any very definite conclusions as to pathology and prognosis. There has been heretofore a somewhat arbitrary classification of these cases, but the present exhaustive and critical microscopic examinations will place each case where it belongs.

We may say in general that these tumors occur more frequently in the young, that they are very slow of growth (as illustrated by my second case), that they are sometimes congenital as in the case reported by Vossius, and that they may be of traumatic origin.

Microscopically they are sarcomata or myxo-sarcomata. One of the prominent symptoms to aid in differentiating between a tumor of the optic nerve and a sarcoma of the orbit, is the almost unimpaired motility of the ocular muscles in the former.

THE DISABILITIES OF INEBRIETY—AN INQUIRY RESPECTING THE NATURE OF DRUNKENNESS, AND OF ITS RESPONSIBILITIES.

Read in the Section of Medical Jurisprudence, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Confident assertions respecting the nature and responsibilities of the drunken state are unwise, and very often are unjust. As a matter of fact, drunkenness does not always represent the same condition of the human organism. It does not owe its *origin* in different persons to similar causes. Its *progress* is extremely unlike in separate individuals. Its *consequences* are various and dissimilar in fundamental and decisive particulars. Moreover, the causes which incite to drunkenness may become modified, as physical impairments and degenerations are developed within the structure.

One of the leading elements that enters into the nature of drunkenness is paralysis. This disability is not a consequence of intoxication, but is a component part of it. Attention to this fact will furnish the key to an explanation of the wide range of incentives which lure to alcoholic excess. In the human economy the nervous system is paramount. It not only controls the sensibilities and movements of the body, but it has authority over the mental and moral expositions.

But wheresoever sensibility extends—whether in the physical structure, or in the intellectual movements, or in the moral exhibitions, there too, may sometimes be found instability of nervous function, irregularity of nervous coöperation, and asperity of nervous feeling. What can be more effective in blunting the morbid acuteness of neurotic sensibility than paralysis—the partial paralysis of alcohol?

The applicability of the alcoholic impression, therefore—delusive and disappointing as it may prove in the end—embraces every department of human nature.

To illustrate the distinctions which may characterize the qualities of drunkenness, I will note the features of the drunken state as seen in the *casual* drinker; in the *periodic* drunkard; in the *habitual* drunkard; and in the *chronic inebriate*—that is, in drunkenness associated with fixed and unchangeable structural degenerations.

Casual drunkenness is an interesting study, as it unfolds the nature of alcoholic intoxication without its complications. This form of drunkenness is usually fortuitous, and without premeditation; and when the occasion is passed, and the drunken spell is over, the person implicated returns without reluctance to his customary avocations and habits.

In a space of time surprisingly short after partaking of alcohol, there is induced a state of partial paralysis that extends throughout the nervous system. Paralysis is not an offshoot, a complication of drunkenness, but is a part of it.[1] The characteristic phenomena of intoxication are largely due to disqualifications and inaptitudes arising from the presence of partial paralysis. It is obvious that the nervous incapacity resulting from the alcoholic influence extends all the way from slight incompetency of nerve, to absolute unconsciousness—according to the quantity of the poison taken into the system.

A distinction should be recognized between the disqualifications of simple weariness, and those arising from the paralysis of alcohol. The former are physiological, and are never withdrawn from the supervision of the volitional powers; the latter are toxic, and they are removed from the control of the will. However, the disabilities imposed by the alcoholic influence upon the will are not necessarily of direct application; but, being universal in the organism, they aid to more completely overthrow the power of will through injury to the other capacities.

Alcoholic paralysis does not appear to be uniform in the strength of its impression. Occasionally the motor nerve centres seem to be greatly overcome, while the rational faculties may not be correspondingly affected. Again, the reverse may be true—the drinker being rather steady in his muscular movements, while he is helpless in his intellect. The special senses may also show varieties in the extent of their disabilities. Illusions often deceive the sight, while the senses elsewhere are not seriously affected. Common sensation is impaired; and being dull and inactive, the imagination may accept outside suggestions (or, possibly, inward impulses), as to the nature of things—falsely believing that the qualities suggested are manifested in sensation. There is nothing more conducive to deceptive beliefs than anæsthesia. From these, and analogous disabilities, all springing from paralysis, the phenomena of pure drunkenness are evolved and presented to open view.

Drunkenness largely consists of incoherent movements in the great departments of man's nature. If alcohol produced an uniform effect upon all the nervous powers, the result would be *universal defect*, not *unequal defect*. It would be imbecility, not drunkenness. Nevertheless, it does not follow that an equal paralytic *impression* must result in equal paralytic *effect*. The impressibility of the nervous system is unequal and varies in its several departments. Hence sometimes may be seen the spectacle of seeming excitement in certain nerve centres arising, in fact, from the paralysis of other nerve centres; disturbances in

[1] The fact of alcoholic paralysis is supported by such names as Hughes, Crothers, Poole, Mann, Brower, Mason, Parrish, Kerr, Kowalewsky, and others.

the inhibitory centres are very liable to produce such effects. From these considerations it seems probable that an application of some abnormal force, either to exalt or depress the universal nervous system, would produce an *unequal* and *distorted* display of nervous function.

When a person partakes of alcohol for the purpose of hardening his feelings in order to commit crime, he surely is accountable for the criminal act. In this case, the alcohol is taken as auxiliary to carrying out a purpose previously formed. The intent preceded the act of drinking, and it was formed when the mind was sober. The action of alcohol is here that of a subsidiary instrument in the execution of an offense already determined on.

It will be well to inquire before proceeding further, what the principles of the law are respecting the criminal responsibility of inebriates. "The law assumes," says Hon. Clark Bell,[2] "that he who, while sane, puts himself voluntarily into a condition in which he knows he cannot control his actions, must take the consequences of his acts." Another proposition is appended, namely: "and that his intentions may be inferred." In another place the statement is in this form, to wit: "That he who thus voluntarily places himself in such a position, and is sufficiently sane to conceive the perpetration of the crime, must be assumed to have contemplated its perpetration."

The whole force of the legal apothegm turns upon the words: "in which he knows he cannot control his actions." The assumption is that while sober and before drinking the man knows he cannot control his actions when intoxicated, and *therefore* he is rightfully held to accountability for his drunken conduct. The further assumption that he intended to perpetrate crime, from the fact that he did commit it, is based upon the same hypothesis, namely: he *knew* when he partook of alcohol, that he could not control his actions, therefore "he must take the consequences of his acts."

There are those who will claim that these legal assumptions are not based upon thoroughly ascertained facts—that they are entirely too sweeping and comprehensive. That a drunken man is in such a condition that he cannot control his actions is true. He has the conditions of crime: distorted perceptions, feeble judgment, paralyzed conscience and imbecile will, established by alcohol within his nature.

The question is, has the drunken man voluntarily placed himself in a criminal attitude, at the same time knowing the consequences of his act? How many people *know* that alcohol will partially paralyze the whole nervous system, depriving the inebriate of the natural use of his physical, mental and moral powers? The drunkard does not know these facts. He does not believe them. He may imagine—if he is criminal in intent—that alcohol will *nerve* him for the deed which he may contemplate. Alcohol does not *nerve* the criminal mind at all. It unnerves, paralyzes the moral instrumentalities, and thus it reduces the drunkard to the level of the brute, the insensate reptile.

Every man supposes, ordinarily, that he will always be able to control his actions. While yet sober, he feels competent to foresee, provide for, and properly conduct all of his inebriate movements. He is apt to believe that the evils of intoxication are the outcomes of a mind naturally reckless and wicked, rather than of any special properties belonging to alcohol. The drunkard himself is of the opinion that an intoxicated person can control his actions if he desires to do so; and the strange part of his belief is, that it is founded upon his false notions respecting his own drunken powers. The sound mind cannot mark out lines of conduct for the same mind unsound. If it could insanity itself would be scarcely a defense for crime.

The *consciousness* of sobriety is on a different plane from that of drunkenness. The powers and qualities of one state are distinct from, and unlike those of the other. For this reason, a man who, when sober, has his mental faculties in perfect order, cannot conceive of himself as bereft of them when drunken. If the drunkard knew these facts, then he would "know that he cannot control his actions" when intoxicated; and the conclusion might justly be "that he must take the consequences of his acts." But he does not know them, and while sober and sane he cannot think of them as possible. His *sound* consciousness is ignorant of, and is incapable of recognizing anything in common with, the *impaired* consciousness of drunkenness.

There is a peculiar form of inebriety that has been classified as truly a disease. It is known as neurotic, or periodic drunkenness. It comes on at uncertain intervals of time. The intoxication itself is of the utmost violence. The strongest liquors are chosen, and they are consumed with a haste and ardor bordering on frenzy. The drinking bouts continue for a number of days. They are attended by several periods of alcoholic unconsciousness — the stupor being repeatedly slept away, and immediately thereafter brought on again by renewed potations. After several days of heavy drinking, the neurotic desire for intoxication dies out. Liquor is abandoned altogether; and, indeed, it is probably viewed with feelings of disgust. The period of sobriety may continue for days, and often for weeks—only to be interrupted by a sudden renewal of all the characteristics of unmanageable and unbounded intoxication. In the neurotic inebriate, drunkenness is carried to the utmost limit of human

[2] Med. Jurisp. of Inebriety, p. 7.

endurance, and the paralytic disabilities are more profound in him than in other drunkards.

The incentives to drinking differ widely in the neurotic inebriate, from those of the casual drinker. They are described to be of overwhelming force. The impulse for intoxication arises out of a condition of the nervous system which seems beyond the control of volition. With respect to the power of the will in periodic inebriety, there have been differences of opinion, and also some very positive assertions. Constitutional tendencies may abate, as life progresses, or they may change their forms and features by transmutation. In such ways the intense desire for intoxication may sometimes disappear, and the convulsive drunkard may seem to be actually "cured." These provisos being understood, it will be proper to adduce some authorities to show the nature and strength of the desire for intoxication which consumes the neurotic inebriate.

Alienists usually designate spasmodic drunkenness by the term *dipsomania*. They view it as a special form of inebriety, totally differing from all others in its causes, progress and termination. They class dipsomania with the insane neuroses —that is, with certain well known phases of nerve instability that are universally admitted to be in close alliance with insanity. A few authorities only will be given indicative of the general tenor of opinion amongst those best qualified to speak on this part of the subject; and it will appear that the heredity of this form of drunkenness, as well as its kinship with insanity, is fully conceded by them. These are points of consequence in deciding whether certain cases of drunkenness are "voluntary;" and also whether the spasmodic drinker may be supposed to "know" what will be the consequences of intoxication in his own person.

When treating of *heredity*, Maudsley divides the subject into three branches: 1. Heredity of the same form. 2. Of allied forms 3. With transformation of neurosis. Of heredity of the same form the author says: "that is, when a person suffers from the same kind of mental derangement, which he seldom does, except in cases of suicide or *dipsomania*." Dr. M. says in another connection: "An individual inherits from his parents not only their family nature, . . . but something from their individual characters, as these have been modified by their sufferings and doings, their errors and achievements, their developments or their degradation." Our author declares that "epilepsy, paroxysmal neuralgia, strong hysteria, *dipsomania*, spasmodic asthma, hypochondriasis and suicidal melancholia may predispose to mental derangements in the offspring, as, conversely, insanity in the parent may predispose to other forms of nervous disease in the offspring." [3]

[3] Pathology of Mind, pp. 91–107, 108.

Dr. Blandford[4] speaks as follows: "The particular character of the mania or melancholia depends upon the constitution of the individual, . . . and the same person may at one time be maniacal and at another melancholic. It is true we frequently see the same form in successive generations, *e. g.*, suicidal melancholy and *hereditary drunkenness*." Again Dr. B. says: "Intemperance is increasing rather than diminishing. Hence, I believe, springs the ever renewed insanity of our lower orders. My opinion is that, amongst the lower classes, insanity is on the increase. . . . There is a degree of drunkenness amongst the lower classes that is not found in the higher."

Dr. Bucknill says: "Inquiry into the habits will often discover cause for the production of insanity; habits of *intemperance* for instance, and habits of strong mental excitement." Such men as Bucknill and Blandford find no difficulty in recognizing alcohol as a cause of insanity. Bucknill is at pains to assert that "*strong drink* does often cause disease of the nervous system with disturbance of the mental faculties; and also that such diseases coming from other sources, do give rise to the passion for drink. These are facts that can admit of no doubt. The heredity of such cases and their periodicity are well known to physicians who have made madness their study."[5]

"When mental disease is transmitted, does the form of insanity descend?" is the inquiry of Dr. Tuke. In reply he says: "very frequently this is the case." Dr. T. then gives authorities testifying as to the direct descent from ancestry of hallucinations, monomania, melancholia, mania, general paralysis and idiocy; and he remarks upon his own authority: "Of *dipsomania*, the cases are so common that it is not necessary to detail examples." Tuke quotes from Stewart, of the Crichton Institution, a table showing the descent *in the same form*, of different insane neuroses. In this table *dipsomania* is said to descend as such in 63 per cent. of cases.[6]

Dr. Wynter speaks to the same effect, and classes *dipsomania* with the insane neuroses. Winslow declares: "I do affirm that in estimating the *amount* of punishment to be awarded, it is the duty of the judge to consider the physical condition of the culprit, . . . and *above all*, whether he has not sprung from *intemperate*, insane, idiotic and criminal parents."[8] Unfortunately for this reasonable sentiment, if a person is responsible at all, he is, in the eyes of the law, fully responsible.

It will be perceived that the authorities quoted are men distinguished as practical alienists, and as conclusive writers on the subject of insanity;

[4] Insanity and Its Treatment, pp. 139–145.
[5] Psychol. Med., p. 401; Habitual Drunkenness, p. 57.
[6] Psychological Med., pp. 67–70.
[7] Borderlands of Insanity, p. 49.
[8] Lectures on Insanity, p. 156.

and that they classify dipsomania with the insane neuroses.

But notwithstanding all this, the distinguished jurist, Hon. Noah Davis, of New York, speaks as follows: "Doctors are very apt to fall into the idea that inebriety should of itself act as an excuse for crime. It may perhaps act justly, in some cases, as a modification of the guilt, in the mind of an intelligent judge, to grade the crime or affect the sentence." No one thinks of excusing inebriate crime upon the plea that drunkenness is merely a physical disease, except in so far as disease may contribute to the production of mental and moral incapacity. But Judge Davis himself declares: "there is no excuse or defense for crime in insanity, because *where insanity exists there is no crime.*" [9]

Sometimes there appears to be a gradual elimination of the constitutional crave for intoxication. This may be disguised, however, by the facts of habit and automatism. But the habit being once broken, or rather interrupted—as by some sudden and powerful excitement—the neurotic inebriate may then discover that the terrible longing for intoxication no longer vexes him. He is now credited with a "voluntary" reformation; and he is considered to furnish an exemplification of the notion that the dipsomaniac may reform when he chooses, and also, that he can choose to reform. But there is little doubt that this apparent reformation of the neurotic inebriate is sometimes the result of transmutation of neurotic forms—some particular neurosis, perhaps not always easily detected, taking the place of the dipsomaniacal crave. In such a case there will likely be, sooner or later, a relapse into dipsomania.

There are some considerations which may cast a doubt upon the correctness of the legal assumption regarding the responsibility of the neurotic inebriate. One is, it is *possible* that the drinker may not "voluntarily" have placed himself in a state of intoxication. Another is—it is *possible* that he did not "know" that he could not control his actions when intoxicated.

The continuous repetition of violent intoxication in periodic inebriety, begins at length to inaugurate physical changes and degenerations of the most extensive and serious character. Violent intoxication produces an excessive strain upon the heart and blood-vessels. The frequency of the pulse is increased. The heart itself is made "tense and full," and its walls become weakened and dilated, and its valvular structure is injured. The arteries are stretched, and their elasticity is enfeebled, and the veins become enlarged. "There is," says Dr. B. W. Richardson, "dilatation of the heart with stretching of the valves, especially the semilunars." These injuries to the circulation impress the mental and moral powers unfavorably. Heart disease may cause insanity. Here is a physical condition which aids the neurotic feelings in overcoming the will, and lessens the volitional power to abstain from drink. Heart disease is a common trouble with the periodic drunkard. A large proportion of such persons learn to take alcohol for "palpitation" and "fluttering" of the heart, being ignorant that the temporary relief thus attained, is at the price of increasing and intensified cardiac disorder.

A remarkable disability that is liable to affect the periodic inebriate has been called *alcoholic trance*. Although trance may occur in nervous constitutions without the intervention of alcohol, the toxic effects of that agent exert a peculiar influence in producing it. Alcoholic trance seems to be associated with a deranged consciousness. The person affected presents a dazed and preoccupied appearance. The life of relation is automatic. It is not always easy to detect the trance state, and the person affected is totally ignorant of its existence. Trance may last for a few hours or for many days. Consciousness exists on a plane below its normal level. It is not actually wanting; for a series of consecutive movements attest a certain degree or condition of conscious life. While in the trance state, the consciousness that is connected with automatic existence is separated and disrupted from normal and perfect consciousness. Hence, when trance is present, the events of the normal surroundings—which indeed appertain to normal consciousness—are not noticed; and the remembrance of events then taking place is impossible after the mind resumes its natural functions. Trance life is a blank in memory, and is unknown to all the realities of a healthful existence.

But the great and important fact in the phenomena of alcoholic trance is this: the trance condition is separated completely from healthful consciousness. It has no relations with the rational past nor associations with a rational future. The mind is deprived of the experience and knowledge that might be drawn from its material surroundings, in the formation of such judgments as are necessary for its intelligent guidance, in matters of motive, will and conduct. No man can act with sound responsibility, when he is deprived of the power to know what are the relations and sequences of passing facts.

It is known that morbid changes in the connective substance of the body may be produced by the alcoholic influence, affecting the well-being of the general structure. Entire organs are affected, and nervous and muscular degenerations take place.

It happens at length that the deteriorations and injuries produced by alcohol, themselves, become incentives to intoxication. The proclivity to periodic drunkenness vanishes, perhaps altogether; while the increasing distress, arising from the va-

[9] Med. Jurisprudence of Inebriety, pp. 129–131.

rious physical degenerations of alcohol, calls without ceasing for the lethal influence of intoxication. And so it is, that the periodic inebriate becomes transformed into the daily sot — the *habitual drunkard*.

The habitual drunkard is a degradation from the casual, or from the neurotic inebriate. In daily drunkenness, the periodicity of the neurotic temperament has been overcome by modifications in the constitution caused by early alcoholic excesses. Heart disease, proliferation of the interstitial tissue, degenerations of nerve structure, paralysis of sensation and motion, a feeble intellect, a depraved morality, an unstable consciousness—combine to deprive habitual drunkenness of the *volitional* element that is essential to responsibility.

The hopeless condition of the alcoholic wreckage in habitual drunkenness is further illustrated by some recent researches of the Pathological Society of London. A portion of its report is as follows—the subjects being inebriates: 1. Transverse section of plantar nerve showed *degeneration and inflammatory changes*. 2. Longitudinal section of plantar nerve showed *increase of nuclei and infiltration of leucocytes*. 3. Longitudinal section of phrenic nerve showed *degeneration of nerve fibres, with segmentation of the myeline*. 4. Section of musculo-spiral nerve, with *well marked segmentation of myeline*. 5. Preparation of anterior tibial nerve showed *nerve fibres in various stages of degeneration*. 6. Transverse section of nerve showed *interstitial thickening of endoneurium*. 7. Section of muscle showed *increase of nuclei of sarcolemma, and infiltration of with leucocytes*—with much more of the same sort. Alcoholic changes of the liver and kidneys also were noted.

The claim that an habitual drunkard can *voluntarily* partake of alcohol, *knowing* also that it will take away his self-control, is placing upon him a weight of responsibility that he is ill able to bear.

There is a form of inebriety distinct from that of the casual, or the spasmodic, or the habitual drunkard. The *chronic inebriate* may be called the sum total of all drunkenness. In him are crystallized the disabilities, degenerations and disasters of alcoholic intemperance. Brief functional disorders have changed to structural diseases. The heart is permanently injured, the circulation permanently disturbed, the sensibilities permanently obscured. Reason is defective, morality is darkened, and the will is enfeebled, by the paralysis of alcohol, which, in the chronic inebriate, has become *fixed*.

Automatic and trance life characterize the chronic inebriate. One J. H., a lawyer, drank heavily for years, especially in the evening. By means of certain documents, and also through business transactions, he discovered that he was living a double life, concerning one part of which he had no conscious knowledge nor recollection. This both puzzled and frightened the gentleman —a person of very sensitive disposition—and for several years previous to his death he closely watched his own movements, lest he might, unaware, say or do some undesirable thing. Notwithstanding this, the man undoubtedly lived a trance, or automatic life during a great portion of his closing years.

The disposition of the chronic inebriate, when unclouded by the shadows of insanity, is such that he prefers solitude to the society of men. His friend and companion, the bottle, is more desirable in his eyes than the dram-shop; and hunting or fishing, remote from the presence of human kind, fill, perhaps, the measure of his ambition, and define the boundaries of his industry. The disabilities of the chronic inebriate are of such an extent and nature as to render him, in every part of his existence, an imbecile. He is incapable of rational judgment, or volition, or knowledge, or accountability.

ADENOID HYPERTROPHY AT THE VAULT OF THE PHARYNX; ITS PATHOLOGY AND TREATMENT.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY D. BRYSON DELAVAN, M.D.,
OF NEW YORK.

Two satisfactory reasons exist why such a subject as the above should be presented: first, because it is possible that to some it may not be as familiar as its importance warrants, and, secondly, for the reason that the interchange of personal experience in matters relating to the practical management of a serious difficulty is never without value. I have taken the liberty, therefore, of bringing it before you and, in particular, of calling attention to some special points connected with it which are of great importance to the proper understanding and the successful management of one of the most annoying and pernicious conditions which we are called upon to treat.

Adenoid hypertrophy at the vault of the pharynx may be defined as a condition of chronic enlargement of the collection of lymphoid tissue at the vault or roof of the retro-nasal space, otherwise known as Luschka's tonsil.

The history of this affection may be very briefly stated. Although the presence of an unnatural enlargement in the upper part of the pharynx had been noticed, it is said, by Schneider, as early as 1655, it remained for the distinguished Prof. Wilhelm Meyer, of Copenhagen, to estimate

it at its true value and to propose efficient means for its relief; and while many other authorities have described it since 1868, the date of Dr. Meyer's first article on the subject, that paper is classic and still remains one of the very best ever written.

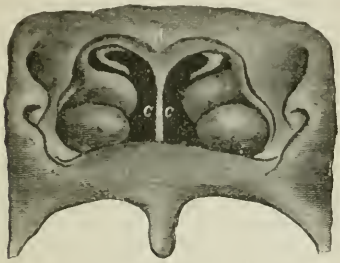


FIGURE 1.

As to the pathology of hypertrophy of Luschka's tonsil it may be said, in general, that the gland is similar in structure to the other deposits of adenoid tissue which encircle the pharynx. In the diseased condition now under consideration it is susceptible of two classes of difficulty. The first of these is an acute or sub-acute inflammation, attended with temporary enlargement, the said enlargement subsiding with the disappearance of the exciting cause. While this cannot be called a true hypertrophy it is a lesion of great importance, both on account of the temporary inconvenience which it causes and, also, by reason of the tendency which it manifests to leave behind a permanent enlargement of greater or less degree.

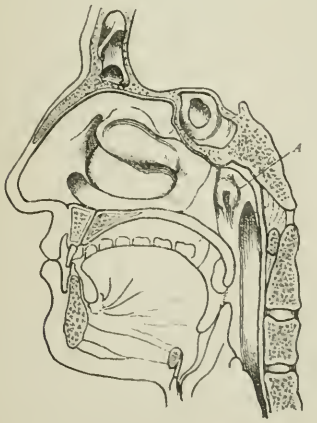


FIG. 2.—Side view of the pharynx, representing the same normal condition as fig. 1. In natural respiration the mouth is closed and the current of air enters through the nose, where it is first filtered, warmed and furnished with moisture, and then passed directly downwards through the larynx and trachea into the lungs.

This permanent or chronic enlargement in the course of time constitutes a true hypertrophy, and, although its actual degree may vary under the general influences which cause it to grow better or worse, it never entirely subsides. Chronic hypertrophy, as commonly met with, is itself of two varieties. In the first the adenoid element seems to predominate, while, externally, the surface of the enlargement is irregular, often simulating a true papilloma. The inconsistency of this variety is one of its chief characteristics, for it is soft to the touch, friable, easily broken up, and shows a tendency, when torn away, to separate in large spongy masses.



FIG. 3. The upper pharynx, showing a large adenoid growth *A* springing from the vault, filling the superior part of the pharynx, covering the tube leading to the ear *C*, and obstructing the entrance to the nose *B*.—(*Lefferts.*)

In the second variety the conditions are essentially different. The hypertrophied mass partakes more of the nature of a well-defined tumor, its base being tolerably small, its surface smooth,



FIG. 4.—Side view of number 2, showing obstruction *A* in upper part of pharynx. Owing to this, the patient must breathe through the mouth.

its consistence firm and its substance composed more largely of fibrous tissue element. Operation upon the latter variety is far more difficult

than the former, as its dense structure offers greater resistance to the efforts of the surgeon, which, when successful, result in the removal of but small masses of firm tissue, in marked contrast to the large fragments which are easily torn away in cases representing the variety first mentioned.

The location of the growth is of great practical importance, both as regards its effects and as to the comparative difficulty of its removal. Its size may be so great as to practically fill the retro-nasal space, or, on the other hand, the increase in its volume may be so slight as to make it difficult to determine whether or not its condition is pathological. It may be confined strictly to the vault, or it may be diffused over the posterior and lateral walls of the pharynx, or it may exist upon the posterior wall of the pharynx alone, in a large, well aggregated, tumor-like mass.



Fig. 5.—Boy aged seven. Mouth breather, from obstruction of the pharynx; open mouth; vacant expression; pinched nostrils; dull eyes; drooping eyelids; sunken cheeks; round shoulders.—(*Hooper.*)

The symptoms of adenoid hypertrophy at the vault of the pharynx are sufficiently well known to you, for there are few geographical regions in which the difficulty is not to be met with and many, on the other hand, in which it is an exceedingly common affair. It is unnecessary, therefore, to dwell upon this part of the subject further than to indicate the necessity for prompt interference in cases where the pharyngeal condition has existed from an early period in the patient's history. Indeed, many of its results are their own most eloquent witnesses. The stupid expression, anæmic surface, drooping eyelids, open mouth, projecting teeth, arched palate, pinched nostrils, and the deformed chest, on the one hand; and the mental dulness, loss of hearing, nasal obstruction, with all of the distressing symptoms of which it is the cause, the defective speech and constant catarrh on the other, are all sufficiently apparent to the most casual observer; while the reflex effects, as shown in the constant headache, irritative cough, laryngeal spasm and other neurotic symptoms, including in some exceptional cases such extreme results as chorea and, it is said, epilepsy, offer corroborative evidence to the more visible and tangible conditions already mentioned. Even in the infant it may be suspected, through the presence of mouth breathing, snoring, and a marked inability to perform the act of nursing.

There is one effect of this obstruction to nasal respiration, however, which is not unworthy of consideration. I refer to the permanent deformity of the bony framework of the nose and hard palate, due primarily, as it appears, to atmospheric pressure. While with the angular upper jaw and high arched hard palate it is sometimes possible to find a normal nasal septum, the contrary condition is the rule.

Some of the worst exhibitions of septal deformity met with are associated with obstruction to free nasal respiration. The well known experiment of occluding one nostril in a growing rabbit has proved conclusively that marked asymmetry may result, and there is every reason to believe that similar causes in the young child may be followed by like deformities, and that too, at a very early period of the child's history. Zuckerkandl, whose observations have mainly been confined to the dead-house, goes contrary to common clinical experience when he makes the positive statement that deflection of the nasal septum never occurs before the seventh year. I am confident that deformity of the septum and of the other bony structures of the nose may arise early in life from obstruction to nasal respiration, due to adenoid hypertrophy in the retro-pharyngeal space and that in consequence, during the period of constructive activity, impeded nasal respiration is a constant menace to the healthy development of the osseous structures of the nose. Indeed, one of the most marked deflections of the nasal septum I have ever seen was in a boy three and a half years old. Nor is it the nose alone which thus suffers. The experiments above quoted prove that unless the air enter normally the sinuses adjacent to the nose, they too will be undeveloped and, in consequence, the whole conformation of the face may be materially changed.

Finally, as has been stated, nervous symptoms innumerable, both direct and reflex, must be recognized and their true origin traced, the general principle being conceded that the disease in question has extraordinary capabilities in producing them and that it is difficult or even useless to attempt to control them without removing their prime cause.

Considering these things it becomes highly important to secure the early recognition of the necessity for treatment in such cases, and to see that it is carried out promptly, efficiently, and to the best good of the patient. The treatment in these cases must depend in some degree upon the nature of the growth, the size to which it has attained, and upon the age of the patient.

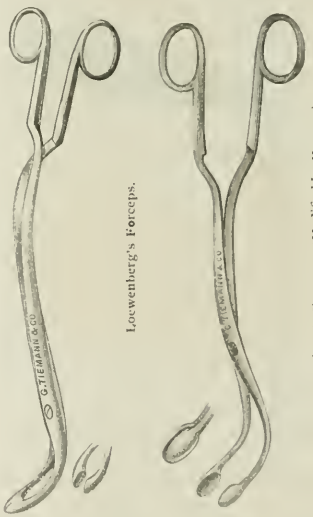
In a few instances, where the disease is acute or sub-acute, where the tissue is soft, and where the growth is small, or finally, where the patient is old enough to submit to local treatment, the application of resorptives and the administration of alterative and tonic medicines, together with careful attention to hygiene, may accomplish a cure. Too often, however, these means will be found unsatisfactory, and the question of radical measures will present itself. Here, as in many other instances, surgery comes to the rescue, and where other resources have failed, we have in it the means of immediate, certain and radical cure. And first, as to the methods by which the offending tissue may be removed, two general classes of operation are employed. The first of these is the destruction of the growth by means of caustic substances or the galvano-cautery, and the



King Knife, or Curette.

second, and by far the most popular, its forcible removal by means of some surgical instrument. With the first method we have seldom been able to attain as satisfactory results as with the second, although in certain exceptional cases, where the amount of tissue to be removed is small and its situation remote, it is both convenient and efficient.

By far the larger number of the more severe cases, however, will demand removal by cutting or tearing process. To meet the requirements of this many instruments have been devised, some of great practical utility, and others of little or no importance. These instruments may be divided into four classes: *a.* Those made upon the principle of the curette; *b.* the double curette or forceps; *c.* the wire loop, and finally, *d.* the adenomatome. The first class includes the ring-knife of Dr. Meyer and its modification, the sharpened finger nail of the operator, a most useful adjunct to the more complicated instruments, and the artificial finger nail, a metallic shield, made to be adjusted to the tip of the finger of the operator and having a sharp rounded edge corresponding to the finger nail; the second, the forceps of Loewenberg and its varieties; the third, an ingenious modification of the Jarvis snare, and finally the fourth, a double cutting instrument, furnished with scissors blades, called the adenomatome.



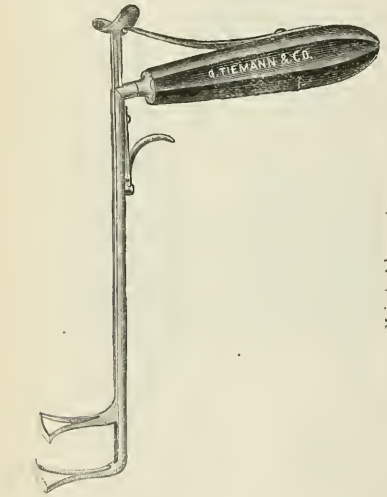
Loewenberg's Forceps. Loewenberg's Forceps. (Modified by Hooper.)

Of these instruments the one most generally useful in the hands of the writer is a modified Loewenberg forceps. With this, assisted by the finger nail of the operator, most cases may be satisfactorily reached.

The other instruments necessary for operating under anæsthesia are, a good mouth-gag, and a soft-palate retractor. The latter should be made with a shank broad enough to protect the uvula from injury during the process of operation.

The position of the patient during operation is of considerable importance. Two methods are in common practice. In the first, the child is

held upon the lap of an assistant in the sitting posture, with the head upright and turned toward a good light. The head is steadied by a second assistant, who also manages the mouth-gag. The soft-palate may be drawn upwards and forwards by means of the palate-retractor, or it may be secured by tapes passed inwards through the nose and outwards through the mouth and the ends tied outside after Wales' method. With the head inclined forward in this position the blood caused by the operation will tend to escape from the mouth to the outer world, instead of being swallowed. Moreover, the pharynx can be well illuminated and the steps of the operation better directed by the aid of vision. The position upon the back is preferred by many good operators, requiring as it does, the services of fewer assistants and being the one to which a large majority of surgeons are better accustomed. It is not so favorable as regards the admission of light to the pharynx, and therefore, it requires a greater degree of skill on the part of the operator,



Major's Adenomatome.

whose tactile sense must be highly educated by way of substitute. Blood, instead of flowing out of the mouth, is swallowed into the stomach. This is not a decided disadvantage, for it trickles down from the posterior wall of the pharynx and escapes into the œsophagus, almost without making its presence felt, unless the flow excited has been considerable.

A possible objection to the upright position is the additional risk of fragments of detached tissue falling into the larynx and thus causing asphyxia. Such an accident has been reported. It is not probable that it could occur under the use of the forceps, although by no means impossible with the ring-knife.

The management of a palate-retractor should be entrusted to a skilled assistant, as upon this the convenience, and, to some extent, the success of the operator will depend. Great care should be taken to place the retractor in such a position that the antero-posterior diameter of the entrance to the upper pharynx be made as wide as possible and that the most perfect protection be afforded to the uvula. Preliminary to operation the most thorough rhinoscopic examination possible should have been made and the situation, form, size and texture of the growth well studied. Where this is impossible examination by means of the finger is admissable, and digital exploration of the pharynx should always be made after the child has been anæsthetized and immediately prior to the operation. Should the growth be large and its attachments not easily demonstrated by the finger, a curved probe will lend useful aid in their mapping out. By the practice of careful preliminary examination, a fair idea of the amount of tissue to be removed may be gained and if, during the operation, the fragments removed be preserved, it will be easy to estimate what part of the growth has been withdrawn and how much of it still remains.

The removal of adenoid tissue from the pharynx is attended with more or less bleeding, and this, while generally of no importance, may sometimes be considerable. It is best, therefore, that the tissue be torn away, rather than cut. This method has the additional advantage of greater thoroughness, as masses of adenoid much larger than the fragment grasped by the instrument are frequently separated and, by this method, it is not likely that the healthy and more resisting parts will be injured. Remnants of adenoid tissue left behind by the forceps may be removed by the finger nail of the operator, by Hooper's modification of the Loewenberg forceps, or by means of a small carefully guided curette. Should the removal of a mass of adenoid be followed by undue bleeding it is well to defer further attempts at operation for a few moments, until the hæmorrhage shall have ceased, or, at least, until it shall have sufficiently diminished. Too great force in the separation of a fragment of tissue must be avoided. It is better to release the mass included in the grasp of the forceps and seize a smaller portion, or else, by applying them in a somewhat different position to separate adherent fragments, than it is to attempt to accomplish too much at once.

The manipulation of the instruments used in this operation as well as the *tactus eruditus* necessary to the clear understanding of what is being done are accomplishments which, of course, are best gained by practice and experience; it is safe to say that with the majority of operators, although

satisfactory improvement may be secured after a limited number of cases have been studied, better and more certain results will be attained as the number of operations increases, and the skill of the operator is cultivated thereby.

In operating upon the upper pharynx anæsthesia is of the greatest possible value both to the physician and to the patient. The almost universal testimony, both from children and adults, is to the effect that the process of the removal of adenoid tissue from the pharyngeal vault is exceedingly painful. Exceptions to this are undoubtedly met with, and in the case of the strong and phlegmatic, and where the growth is soft, it may be well to dispense with a general anæsthetic in favor of cocaine. As a rule, however, patients who suffer from adenoid hypertrophy are not strong, nor are they phlegmatic. On the contrary, they are apt to be delicate, nervous and timorous, easily alarmed, susceptible of acute suffering, and, finally, likely to undergo a highly undesirable degree of depression as the direct result of operation. Not only is the comfort of the patient secured through anæsthesia, but the convenience of the operator is infinitely increased thereby, as may be readily proved by contrasting the difficulties in the way of successfully executing a delicate operation, requiring accuracy and care, upon a child whose struggles cannot be wholly restrained, even by the aid of strong assistants, with the same performance accomplished quietly and with deliberation. With general anæsthesia ample time is afforded for careful examination both before the commencement of the operation and during its progress and for the checking of undue bleeding should any occur; perfect control of the operation, as well as of the patient can be maintained; thorough relaxation of the throat can be secured; the inducement of retching, from pharyngeal irritation, that most active and persistent of reflexes, can be avoided; troublesome remnants of the growth can be recognized and removed; undue excitement can be prevented; and, finally, the whole work can be accomplished without pain and even without the slightest knowledge on the part of the patient of what has been done.

On the other hand, to grasp a highly sensitive child and hold him by main force; to display before him an array of surgical instruments; then to pry open his reluctant jaws; to plunge wildly into a remote and highly organized recess like the upper pharynx an instrument possibly too large to enter with ease; there to seize and remove "by a tearing and twisting process" large fragments of tissue with a sensation described by adult patients "as if the top of the head were being torn off;" to repeat this again and again at one sitting, the child meanwhile being half strangled with blood; or, worse still perhaps, to continue it at repeated sittings, is a process which cannot be too strongly deprecated, and which may naturally result in terrorizing the child, and in imparting a nervous shock, in itself by no means devoid of danger. It may be said, it is true, that the above seems overdrawn and that no one would think of operating in the manner described. Unfortunately, however, such operations have been and are done, and it is the wish of the writer to urge most strenuously against them.

As to the choice between ether and chloroform, aside from other considerations the latter has the special advantage of not exciting the abundant flow of viscid mucous from the pharynx which accompanies the administration of ether.

The care of the child after operation is a matter of considerable importance. Two varieties of treatment, one immediate, the other remote, must be carried out. As to the first, it must be remembered that, for perhaps several days after the operation, the patient is laboring under what may be called the surgical condition. During this time he should, if possible, be put to bed, and kept there until any abnormality of pulse and temperature have subsided and until any signs of nervous shock may have disappeared. Attention to this detail even at the cost of some inconvenience will be amply repaid. Meanwhile the administration of tonic doses of iron and quinine will materially hasten recovery. In other words, to this surgical condition the ordinary rules of surgical treatment should be applied.

Again, it must not be considered that with the performance of the operation the case is completed and all possible help to the patient afforded. The general condition should be made as perfect as possible, to which end change of air is often of great benefit, and, most important of all, the patient should be carefully examined in order to determine whether or not the operation has resulted in a thorough and complete success. Should the contrary prove to be the case, further treatment may be called for, and although when properly performed at first, it will seldom be necessary to repeat it, there is no reason why this should not be done when required. Indeed, it is well, in difficult cases, to mention to the parents beforehand the existence of such a possibility.

The pharyx being freed from the offending tissue, such conditions as catarrhal inflammation, relaxation of the uvula and the general tendency to local congestion can be greatly benefited by topical treatment, although it is pleasant to be able to record that in most instances special interference will be unnecessary.

The second variety of treatment relates to the cure of certain direct results of the naso-pharyngeal obstruction, namely, to mouth breathing, to errors of pronunciation and to deformities of the chest walls and of the framework of the nose.

When free nasal respiration has been actually established every possible encouragement should be held out to the patient to close the mouth and breathe through the nose, both while awake and asleep. Much help will be given if the jaw drop during sleep by affording it some artificial support. For this purpose a bandage of mull, tied under the chin and over the top of the head, this held in place by a second bandage tied around the forehead, the two being held together with safety pins at their intersection opposite the temples, as suggested by Dr. T. R. French will be found effective.



Fig. 6.—Method of bandaging the chin to prevent mouth breathing during sleep.—(*French.*)

The difficulty in pronouncing certain consonants is sometimes due partly to the relaxation of the soft palate common in these cases and it does not disappear immediately after the removal of the pharyngeal tumor. This condition should be remedied by appropriate local treatment, the patient meanwhile being trained by suitable vocal exercises.

Deformity of the chest, the so-called "pigeon chest," so commonly present in these cases, should be recognized, and physicial exercise appropriate for its eradication, be instituted. Nasal deformities too should be looked for and, if present, appropriately treated, although it is often astonishing, particularly in the case of the very young, how readily they will subside under the influence of the admission of fresh air and the restoration of the normal function of the organ.

In conclusion, it will appear that adenoid hypertrophy at the vault of the pharynx is a disease of common occurrence; that its presence is fraught with danger, particularly in children during the growing period; that the condition is easily recognized even by those not specially versed in the diagnosis of diseases of the throat; that it is absolutely remediable; and, finally, that by the use of skill and thoroughness in the performance of the necessary operation the most satisfactory results can be attained.

A CASE OF OLD FRACTURE OF THE PATELLA CURED BY WIRING THE FRAGMENTS.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Of all the various fractures of bones of the human body, there is *none* which excites more uneasiness as to the result of the healing process, in the mind of the surgeon, than does a solution of the continuity of the patella. Various devices have been advocated for the purpose of keeping the fragments in apposition, in order to have the desire of the surgeon realized—union by bone, instead of cartilage; but none of these instruments have produced the results of which, taken collectively, we may as a profession be proud. To be sure, with the hooks of Malgaigne, better results have been obtained in later years than formerly, though the failures have been many and near together, while diseases of the fragments of bone may have been caused by their use.

To say the least, they are cruel. Next to the hooks, come in their order plaster of Paris, mole skin plaster, bandaging, etc.; *all* of which in our hands have proved unsatisfactory. To be sure, an occasional case will get well with fair results, from seemingly simple dressings, but these cases are exceptional and unusual. About twenty-five years ago the method of cutting down, and in the case of old ununited fractures freshening the edges of the fragments, and wiring them together with silver wire, came into vogue. For a time it fell into disuse, to be again revived by that famous surgeon, Sir Joseph Lister, the man to whom we owe our deepest debt of gratitude. One thing seems to be pretty well established, and that is, by this method a greater percentage of good recoveries have been reported, than by any other, and if done under strict antiseptic precautions, it is comparatively free from danger. The following case will illustrate the method and result:

John F. H., an American, 41 years old, of bad habits, on January 23, 1884, about 5 P.M., slipped on the ice at 148th St. and North Third Ave., New York City, and fell heavily to the sidewalk, striking his right knee. On attempting to rise he found he could not do so. An ambulance was called and he was taken to the Reception Hospital of Bellevue Hospital. At this place it was set, by means of, as he termed it, a surgical instrument and rubber plaster. He was kept there for two weeks and two days. On the Sunday evening previous, Prof. Frederick S. Dennis saw him. August 31, had him put in a plaster of Paris splint and transferred him to St. Vincent Hospital. Here the plaster of Paris splint was

kept on for three days, when he was taken to the operating room and Prof. Dennis applied Malgaigne's hooks. This was done without ether but with considerable pain. These hooks were kept on for six weeks and were then taken out, but not without a great deal of pain during their removal by house surgeon Riley. He remained in the hospital two weeks more and then left with an ununited fracture, but still with the aid of a cane he was able to crawl around. In October, 1887, he was brought to me by Dr. G. H. Pierce, of this city. I found that the bone was fractured in three pieces, that there was only cartilaginous union, and that the gap between the fragments was about 2 inches. His trade was that of an awning maker, and at it he could not work at all. In fact, he was liable to fall at any time from the slightest rotation inward or outward of the foot. I advised an operation and he was removed to the Danbury Hospital, where, on November 26, in the presence of Dr. Robt. T. Morris, of New York, Drs. Watson and Pierce, of Danbury, Barber, of Bethel, and Todd, of Ridgefield, I did the following operation: Thoroughly washing the parts with soap and water, aided by a nail brush, and shaving, and then douching the limb with a solution of bichloride 1–1,000, I made an incision (an irrigating tube playing on the wound all the time, with a bichloride solution 1–1,000), in the median line over the patella. The incision was about 7 inches long and the skin and fascia were then dissected up. I found that the fragments were widely separated and connected only with moderately firm cartilaginous bands. These I dissected out, and with a cartilage knife, I cut away enough of the bone of each fragment to make a well roughened edge. By the aid of assistants I made holes in them and, drawing them together with double silver wire, I twisted them tightly. The coaptation was perfect.

After all the sutures were in position, the ends were twisted and hammered into the larger fragments, where they have remained to this day, causing no inconvenience whatever. The débris was all cleared out, bleeding stopped, the edges of the wound brought together with silkworm gut stitches, iodoform dusted on the external surfaces, a cotton pad placed over all and a roller applied. A straight board splint was applied to the posterior surface of limb, held in place simply with a roller. The patient rallied from the shock quickly, and for ten days did not have a pain or suffer the slightest inconvenience. On the thirteenth day I took off the posterior splint and put on a plaster of Paris dressing, but this caused so much pain that I had to remove it on the same day, replacing it with the old one taken off. The patient was kept in the recumbent position for eight weeks, when he was allowed to go about the ward. The wound healed throughout its entire extent by first intention. There was *no* inflammation of any character, and when he was discharged after three months there was firm union; the limb was as strong, he said, as ever. Here certainly was a man restored to usefulness by the wiring of the fragments when several other methods had failed.

THE MECHANICAL TREATMENT OF SYNOVITIS OF THE WRIST.

BY CHARLES F. STILLMAN, M.Sc., M.D.,
OF CHICAGO. (MEMBER OF THE AMERICAN ORTHOPÆDIC ASSOCIATION.)

In cases of a mild grade of inflammatory action, felt splints or immobile dressings may be used, but in those of a more serious character, when traction becomes necessary, it may readily be produced, and fixation of the joint increased and maintained by the use of two plain wooden splints extending from the base of the fingers to the elbow (see fig. 2). These are to be notched at each end and are not to be wider than the arm. They are to be placed one anteriorly and the other posteriorly, and are applied by means of adhesive plaster in the following manner:

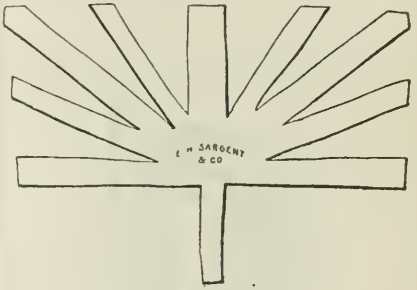


FIGURE 1.

Select plaster of the moleskin variety, and cut four pieces in fan shape shown in fig. 1. To the center of these attach, with needle and thread, strong webbing straps, each a trifle longer than the wooden splints, and to the free extremities of two of these straps, secure buckles of the same width. These four adhesive plaster fans are next to be interlaced, two above the joint and two below, and the ends are to be drawn over to the extremities of the splints, and buckled together as shown in fig. 2. It will readily be seen that the more tightly these are drawn, the greater the traction will be upon that part of the wrist between the interlacing adhesive plasters, and thus will be effected a true extension of the wrist itself.

These splints are to be secured by four or five transverse bands of adhesive plaster around the arm and hand (see fig. 2), and over all a roller bandage is to be neatly applied. This method

of producing traction is simple, ready and effect-

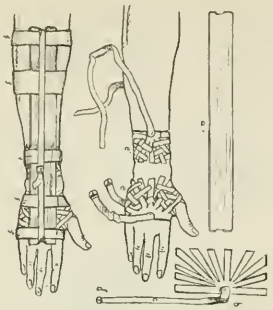


FIGURE 2.

ive for any of the joints, where more elaborate

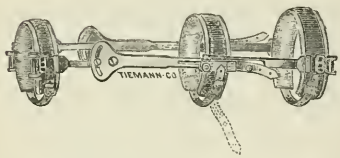


FIG. 3.—Stillman's Brace for Extension of the Wrist.

apparatus cannot be obtained. It is original with the writer and was first published by him about eight years ago. In many cases it will be found preferable for the surgeon to use a traction splint which will allow the hand to be fixedat any given angle with the arm, and fig. 3 represents such a brace devised by the writer. As will be seen by the engraving it permits fixation at any angle, and allows motion without interfering with the traction upon the wrist, and is applied in a manner similar to that of the wooden splint just described, but as it permits more control of the joint than the latter splint, it is to be be preferred when obtainable.

When extension of the joint is desired—and yet a brace is objected to—Esmarch's traction apparatus may be employed. This is shown in fig. 4 and is applied in a manner corresponding to Buck's extension of the lower limb, the arm resting upon a pillow and inclined plane. But as this method of producing extension, necessarily implies confinement to the couch, it is open to objections, which the use of traction splints, even in severe cases, does not present.

The use of the various forms of apparatus just described renders the treatment of inflammatory and deformative conditions of the wrist an easy matter, and the results of all operations about the joint, are, by their use, rendered very much more certain.

125 State street, Chicago, Ill.

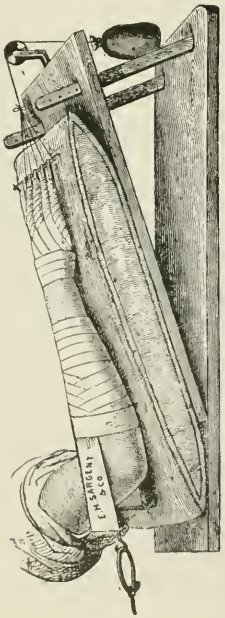


FIG. 4.—Esmarch's Apparatus for Wrist Extension.

APPENDICITIS, WITH REPORT OF ONE CASE; ILLUSTRATED.

BY A. C. LAMOTHE RAMSAY, M.D.,
OF ST. CLOUD, MINN.

This case is a beautiful illustration of what Senn says in his masterly article on "Ulcerative Appendicitis" (in Vol. xiii, No. 18 of THE JOURNAL): "Many patients suffer from well-defined symptoms indicative of the presence of an inflammatory lesion of the appendix for months and years before it gives rise to a perityphlitis or perforative peritonitis."

Peter R., æt. 27, student, consulted me at my office December 14, for a vague recurring pain in the lower part of the abdomen of four years' duration. He attributed it to running one day, when he felt something give way in the ilio-cæcal region. He was a strong, muscular young man with a good family history, and besides those pains had never been sick. The pains had never caused vomiting except once, two years ago. His pulse was 82; temp. 37.7° C.

Examination revealed no tympanitis, no swelling in ileo-cæcal region, and only slight tenderness on deep pressure. Rectal examination revealed nothing abnormal. Urine normal. He

never had suffered from constipation and very seldom from diarrhœa.

My diagnosis was appendicitis, and an early operation advised.

The next morning I was called to see him. There was more pain and very marked tenderness over the cæcal region. As he grew no better, he consented to the operative interference, and was admitted in my service in St Benedict's Hospital December 18, and prepared for the operation by thorough antisepsis.



Natural size. 1, perforated extremity. 2, ulcer. 3, calculus.

Operation December 19. — Ether anæsthesia. After removing the preparatory dressing of iodoform gauze the parts were washed with ether and the usual incision for ligation of the common iliac artery made. All bleeding points were carefully secured, and on getting down to the peritoneal cavity behind the cæcum, a small calculus, the size of a large bean, was found lying in a tablespoonful of fæcal-smelling pus. There was a well organized blood clot extending upwards on the muscles; this was carefully removed and gave rise to considerable hæmorrhage. The cavity was thoroughly cleansed and the peritoneum opened from behind. The appendix could be felt like a firm body slightly shorter than usual, it was adherent to the mesentery, the end was rough and presented the appearance of everted intestine. The appendix was brought out in the incision and ligated near the cæcum with a silk ligature, and the peritoneal surface sewed over after it had been disinfected. Then it was sewed in the peritoneum with continuous catgut suture. The specimen (Fig. 1) presented when opened one large, almost circular deep ulcer, with regular outline; at the extremity was a perforation which had destroyed the end. The lumen near the cæcum was very small, but the removed portion could easily admit an ordinary lead pencil.

The external wound was then closed over a glass drainage tube, with silk sutures to, but not including, the peritoneum, iodoform dusted over the incision, a piece of oiled silk over the same, and iodoform gauze and borated cotton over all completed the dressing.

The second day after the operation there was considerable oozing, the dressing was changed and the cavity washed out with a 1–40 carbolic solution. The pain left him after the operation and has not reappeared since. He went on to recovery, and two weeks after the operation could leave his bed feeling like a new man.

In concluding I would call attention to the small amount of pain in this case; the patient never having kept his bed only for a few days before the operation, and to the necessity of drainage in these cases.

MEDICAL PROGRESS.

The Influence of the Prevailing Epidemic upon Tuberculosis.—Dujardin-Beaumetz calls attention to the fact that Grad formerly considered the influenza as a dangerous disease, more dangerous even than cholera. In view of the fact that the present epidemic has doubled or even trebled the general mortality, he believes that considerable importance should be attributed to this statement. He himself has observed a curious fact which he is quite unable to explain, viz.: that there are more than twice as many deaths among men as among women. Is it possible that this is because tuberculosis is more common among men than among women? He does not attempt to settle this question, but believes that the hypothesis finds support in facts noted by authors, especially at the present time, that the grippe is nearly always fatal to tubercular patients, the mortality among them having been considerably increased during this epidemic. The author also raises the question, "What is the subsequent history of the victims of the grippe from the point of view of tuberculosis?" Clark, in speaking of the epidemic of 1832, said that in many cases it was the point of departure for tuberculosis. Fournet made the same remark with regard to the epidemic of 1837. Brochin wrote that phthisis has often been known to develop under the influence of the grippe. Recent authors, among them Hérard, share these opinions. In view of the fact that we are convinced of the contagiousness of tuberculosis, seeing also that congestions are of frequent occurrence in the grippe, and considering finally the general enfee-

blement produced by the disease, these ideas seem to be perfectly rational. The future will show in how far they are justifiable.

In this same connection M. Cadet de Gassicourt draws attention to the statement of Bertillon that influenza is much less infrequent and grave among children. May the point of departure of tuberculosis be looked for in this direction? We know that a considerable number of young children die of this disease; it would be of interest, therefore, in these fatal cases, to study the relative influences of heredity and the grippe.

Treatment of Epilepsy.—M. Cornet (*Jour. de Méd.*) reports the results of experimentation in the use of bromide of gold, bromide of camphor and picrotoxin in the treatment of epilepsy. The bromide of gold seems to exert some favorable action in certain cases, although its action is inferior to that of bromide of potassium. No physiological difficulty is experienced in administering 3 centigr. per diem. The remedy is eliminated by the kidneys and the bromine is found in the urine very soon after its ingestion; it disappears slowly. The gold accumulates in the system, its presence having been discovered in the liver; it does not appear in the urine until it has been administered for a long time.

The bromide of camphor, the action of which in epilepsy is still disputed, does certainly possess a favorable action upon the vertigo of epilepsy, which is lessened or even made to disappear. The bromide of camphor is eliminated in the urine, the bromine in the state of bromide of sodium and the camphor in the form of derivatives.

Picrotoxin produces a favorable effect upon the epileptic seizures in the dose of 1½ to 2 milligr. Experimentally it produces epileptiform convulsive attacks. Upon autopsy the toxicity of picrotoxin is witnessed in the hyperæmia of the organs; it is also found deposited in the liver.

Bryonia Alba as a Uterine Hæmostatic.—Petresco (*Journ. de Méd.*) finds that the root of bryonia alba possesses hæmostatic properties analogous to those of ergotine and hamamelis. As employed by Petresco 25 to 30 grm. of the dried root are boiled in 300 grm. of water until the bulk is reduced to 150 grm.; the decoction is then filtered and edulcorated. This entire amount is given in three or four doses at intervals of half an hour. Urbenu, in analyzing the root, obtained several resinous principles and glucosides in alcoholic and aqueous extracts, the therapeutic activity of which varied in intensity according to the dose, but always gave effects identical with those which have been obtained from the root itself. The glucoside possessing the most powerful action has been termed by him *bréine*, from *bréi*, the popular name borne by the bryonia alba plant in Roumania. He has given the glucoside to rabbits in doses of 20 centigrm. in 1 grm. of water (one Pravaz syringeful), and in doses of 10 centigrm. to frogs. Doses of 1½ grm. are poisonous to rabbits, while 15 to 20 grm. are poisonous to frogs. Dogs and cats bear a dose of 1.40 grm. of bréine administered subcutaneously, very well. The author has also employed aqueous and alcoholic extracts of bryonia alba, giving them in pills, potions, etc., in the dose of 1 to 3 grm. a day. With the alcoholic extract especially, in doses of from 2 to 3 grm. a day, good results have been obtained in the treatment not only of metrorrhagia, but also in epistaxis and hæmoptysis.

Prophylaxis of Tuberculosis,—In a recent discussion in the *Académie de Médecine*, M. Germain Sée recalled the fact that in 1782 a law was enacted by the King of Naples which compelled physicians to declare all cases of phthisis under penalty of a heavy fine or even banishment. The effect of the same law was to send poor patients with phthisis to the hospital, the director of which was obliged, under penalty of the galleys, to set apart all clothing belonging to such patients. He was also obliged to renovate the rooms of these patients, and burn the windows and doors and replace them with new ones. Penalties was also attached to the sale of the effects of phthisical patients. Every house in which a patient died was designated as infected and thus the proprietors were often reduced to poverty. These sanitary rules were merely copies of the regulations regarding the pest. A similar law was enacted in Portugal. As may readily be imagined the law was productive of endless misery while it remained without effect in the restriction of the disease. M. Sée believes that phthisis is conveyed entirely through the medium of the sputum, and that the prophylaxis of the disease consists merely in destroying the expectorated matters. The physician then should insist upon cleanliness which is the beginning and end of prophylaxis. It is wrong to sequestrate the patient. Instead of denouncing him to the authorities as was done in Naples, instead of depicting him to his family as a repulsive infectous object, instead of tracking him as a pestilential creature, instead of dooming him to perpetual quarantine and inflicting the pains of an anticipated death, the physician should remain silent regarding the nature of the malady and calm the patient's troubled mind, especially if he has been unfortunate enough to have read the popular instructions emanating from the "Congress of Tuberculosis."

M. Sée directs attention to the fact that phthisis has become a very prevalent disease in Algiers since its occupation by the French, whereas in former years the disease was almost unknown in that country.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MARCH 8, 1890.

UNITY THE SEQUENCE OF PROGRESS.

As surely as result must follow cause, so surely will present methods of investigation lead, and that in the immediate future, to a more rapid development of medical science. Never before in its history were so many men of ability and culture bending their energies to the verification of facts already stated and to the discovery of new truths. Rich fields were all the time awaiting investigation, but until now it was impossible to enter them. Hitherto men must needs content themselves with gross appearances, and speculate with reference to that which was beyond the limit of their comprehension. But by the added means of vision, which in itself is yet to be improved, these new and hitherto untrodden fields are brought within the range of study, and fresh discoveries of untold value are being added to our wealth of knowledge every day; and each new truth but helps the more to interpret what we knew in part, and comes to serve its special purpose in the healing art. What satisfaction arises from the thought that each new fact will surely harmonize with all that went before and be as surely in accord with other truths that are to follow, and that in the final outcome, when all are properly related, medicine will as surely and as justly as any other be numbered with the exact sciences. Each truth, itself imperishable, must harmonize with every other, until they blend, at last, in one complete and perfect whole. Thus shall our science be symmetrical in form and perfect in every member.

But let us consider again the means at hand for the accomplishment of this result. By reason of new helps our vision is enlarged until that which before was hidden in mystery becomes an open book. The structures of the tissues are all before us. Cell growth reveals itself in all its forms. The morbid changes to which the various structures are subject, and the diseases incident to these changes, become more and more apparent, until we come to understand that many of them are simply the expressions of such morbid changes. Now, as not before, we can attain to a clearer understanding of the germ theory and demonstrate the presence and the forms of disease-producing parasites.

Now, too, we may command from chemistry such service as was hitherto impossible, and from our studies in the laboratory and with the microscope can turn to the investigation of diseases with the confident anticipation of determining their alternate causes.

Truths thus discovered must command universal assent. The greater their number, the more surely will men come to see eye to eye, and the more must they harmonize in their views of medical science. With a common acceptance of facts, a more perfect unity in the profession must surely obtain. This final result is logically inevitable.

The laws of chemical affinity are the same, whoever may study them. Those which govern in physiological development and in all morbid processes are, under similar circumstances, alike to all observers. They have one common language; they are unvarying in their expressions; they demand a common assent, and that common belief begets *unity*.

It is to be devoutly hoped that the days of mere theorizing are ended. As we survey the past it seems incredible that many of those theories should have taken such strong hold upon the public mind, and that they should have survived so long. Nor has their unwarranted extravagance seemed to militate against their power. This fact can hardly find more fitting illustration than in the admirable address with which the present number of THE JOURNAL opens. We commend its candid utterances to the attention of those who care to know more fully of the past history and present status of homœopathy, which

name its devotees now propose to drop, while they re-christen the child of a hundred years "The New School."

May we not hope that in the immediate future better methods of instruction based upon the sure foundations of microscopical, chemical and clinical investigations will render the promulgation of such unbounded extravagances under the guise of medical teaching, to reasonable and reasoning students, impossible.

What we most need at the present hour, and what we shall need in the future, is the bestowment of the skilled labor of those who are able to interpret correctly the morbid changes that are constantly occurring in the progress of disease. We need to know more and more surely the nature of the causes which produce them. We have no further use for theories, but we have abundant use for facts. And for the accumulation of medical truths, the times were never so propitious. Every active man in every local society is dealing with them; the State societies and our National organization are pursuing similar lines of investigation; and the International Congress only gives a still broader expression of a common purpose. In its power to disseminate medical truths, above and beyond all other agencies stands the medical press. Our exchanges are in all languages, and they come from all lands, but when they speak of what they know—not of what they think—their utterances are in harmony and command a common belief. Let then the labors of our younger men be directed along the same lines of original investigation, and the recorded experiences of older men set forth the simple facts as they are carefully observed in the progress of disease, and when, as often times we must, we still rely upon empiricism in our treatment, let us be alert to discover the reason, if possible, which governs in its use. As far as possible the teachings in our medical colleges should be verified by demonstrations. These must and will command belief. Such teaching alone will hasten the progress of medicine. Such knowledge, and such acceptance of truths imparted will beget such unity in belief and such accord in practice as can be attained in no other way.

Unity in the medical profession must and will follow, as the logical sequence of correct medical teaching.

TYPHUS FEVER IMPORTED FROM ANTWERP.

Before the days of oceanic steam transit typhus fever was much better known in this country than at present. As ship-fever, commonly brought over in sailing vessels from Ireland or England, it was too well known at our seaport towns twenty years and more ago, and many were the young medical men who lost their lives at the fever-hospitals, through attendance upon typhus immigrants and others whom these had infected. The very general adoption of steam vessels for the immigrant service has been a factor in reducing the importation of this once dreaded disease. There have not been a sufficient number of cases in our hospitals to give clinicians an opportunity to illustrate the differential diagnosis of the continued fevers. There are doubless thousands among our younger generation of medical graduates who have never been brought face to face with typhus fever, either in their student life or later. To use an every-day expression typhus is a "back number," along with old-fashioned scurvy and the still more ancient jail-fever, and so it will remain, let us hope, through the efficiency of sanitary measures on both sides of the Atlantic. But there is now in this country, a small number of these fever cases, originally brought hither from the ports of northern Europe, from Antwerp chiefly; and there are some cases that have been begotten in New York from the persons or baggage of those former cases. Two steamers from Antwerp have done the bulk of the importations, beginning their work in December last. The New York City Board of Health has given notice that the nine cases known to have occurred in that city since December 24, have with two exceptions been traced to an infection derived from certain lodging-houses in Antwerp: and a caution is at the same time given to physicians to be on their guard as to the possible springing up of cases in the houses where immigrants have lodged. The question of laxity and shortcoming at quarantine, for not preventing the introduction of this infectious disease, has been raised, but there appears to be no disposition to fasten any great measure of blame upon that office, since the incubation period of the disease may be so long that it is possible that an immigrant may have been infected on the other side of the ocean, and yet not be taken down with the fever until after his arrival in some American port. With regard

to the dispersion of possibly infected typhus immigrants throughout the country, along the lines of our railways, it may be well to utter a word of caution to our readers who chance to run across an exceptional variety of fever, especially in the person of a newly arrived alien from northern Europe; our modern facilities for rapid transportation may possibly be the vehicle of typhus to inland towns that never saw it before. One of the worst features of the case seems to be in an apparent sanitary neglect on the part of those officials on the other side of the ocean, who have allowed the fever-nests to exist so long among their immigrant lodging-houses, although due warning has been sent to them from this side. The possible typhus-infection of a steam-vessel, used for immigrants, is another question the answer to which may be evolved by the present episode; the suspicious fact being that two or more successive trips of the same vessel have been the channel for the introduction of the same kind of infection.

EDITORIAL NOTES.

HOME.

Quarantine against Epidemic Infuenza in Saranac Village.—Dr. E. L. Trudeau writes to the *Medical News* that he has been enabled to carry out, with apparent success, a policy of protective non-intercourse against "la grippe" at his Cottage Sanitarium in the Adirondacks. Fearing that an incursion of influenza would prove disastrous to the invalids under his care at that institution, he undertook the experiment of a quarantining of the place, so soon as the disease appeared in that neighborhood. Since that time, a considerable portion of the population of the surrounding country have been attacked, but no case had occurred among those connected with the sanitarium itself, so late as February 8. That establishment is not more than a mile distant from the village, where has been a number of cases of the epidemic disease.

The Alvarenga Prize.—A medical prize fund, known as the Alvarenga Prize, is in the custody of the Philadelphia College of Physicians, and an award will be made this year, amounting to one year's income from the bequest. The prize will be given to the author of the best unpublished memoir in any department of medicine. The competition must close June 1, 1890, before which date essays may be addressed to Dr. Isaac Norris, Jr., Secretary of the College. The right to reject any or all of the proffered essays, that may be unsuitable, is reserved by the committee on award.

A Pasteur Institute in New York.—The *New York Medical Journal* announces that Dr. Paul Gibier, formerly of Paris, has opened a laboratory in New York City for the preventive inoculation of rabies, according to the methods of M. Pasteur. Dr. Van Schaick will be Dr. Gibier's assistant and Dr. Liautard will be consulting veterinarian.

Special Notice.—The next meeting of the Fifth District Branch of the New York State Medical Association will be the Sixth Annual Meeting, to be held in Brooklyn on Tuesday, May 27, 1890. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D., P. O. Box 94, Brooklyn.

FOREIGN.

The British Medical Association.—The fifty-eighth annual convention of the British Medical Association will be held at Birmingham, during the last week in August, under the Presidency of Dr. Willoughby F. Wade, senior physician to the General Hospital of that city. The Town Hall, Queen's College, and Mason College have been secured for the purposes of the sessions. The local committee on entertainment have their plans already laid for numerous excursions, and the customary evening receptions and amusements for the members.

The Berlin Congress.—Dr. William Goodell, of Philadelphia has been invited by the Gynæcological Section of the Tenth International Medical Congress, which is to be held in Berlin during August of this year, to open the discussion on the Induction of Premature Labor by a paper on that subject.

German Universities.—The total number of matriculated students in the twenty-one German universities in the current semester is 29,007 as against 29,491 last summer session. Berlin stands first with 5,731 students, Munich second with 3,479, Liepzig third with 3,453, Halle fourth with 1,657, Rostock stands last with 346 students. The medical faculties have the largest attendance, the total number of students in them this winter being, 8,714.

TOPICS OF THE WEEK.

THE HYDERABAD CHLOROFORM COMMISSION.

The second Hyderabad Chloroform Commission has ended its labors, and our contemporary, the *Lancet*, in its issue of the 18th of January, gives a summary of the work done and of the conclusions arrived at. As in the case of the former Commission, Surgeon-Major Lowrie presided; but the important fact in the present Commission was the presence of a representative of the *Lancet*, Dr. T. Lauder Brunton. The experiments were conducted with the utmost care, and every precaution that scientific knowledge and familiarity with the details of vivisection could devise were adopted to insure freedom from error either in the performance of the experiment or the conclusions drawn from it. The liberality of his Highness the Nizam of Hyderabad had secured all the necessary scientific apparatus and accommodation, so that the labors of the investigators of the merits or demerits of chloroform were facilitated in every way.

The history of the great work just completed is of more than passing interest. All practical surgeons know that for some ten or twenty years past the London schoolmen and their brethren in the New England States of North America have been not only warmly advocating the use of ether as the best general anæsthetic, but they have denounced with energy the use of chloroform. Amongst the most influential and able of the partisans of ether was the *Lancet*, which was unsparing in its denunciation of chloroform, and its influence with the profession was so great that surgeons using chloroform as their routine anæsthetic did so at considerable personal risk. Chloroform was on the defensive, and everything seemingly offered an easy victory for the advocates of ether when, in 1887, Dr. Reeve, of Dayton, U.S.A., in a contribution to the *Medical News*, asserted that the inhalation of ether "in the human subject may cause death as suddenly, as unexpectedly, and in the identical manner that chloroform does." To openly publish such an heretical opinion in the New England States required more than the average amount of moral courage, and, as might be expected, the opinion was promptly denounced. Dr. Packard, of Philadelphia, said that sudden deaths under ether almost invariably occurred in patients who were previously enfeebled by age, loss of blood, by exhausting disease, or by the results of injury which had already weakened their hold upon life; while in a large proportion of the cases of sudden death under chloroform it occurred in healthy subjects, without loss of blood or dangerous lesion. The war of words recommenced, and the "etherists" were further aggravated by a very valuable paper by Dr. Stroud, which appeared in *Daniel's Texas Medical Journal*, drawing attention to the beneficial effects of chloroform inhalation in cerebro-spinal meningitis.

A special meeting was held in the New York Academy of Medicine to consider the relative merits of the different anæsthetics, and Dr. Gerster tried to reconcile the etherists and chloroformists by pointing out that, in their proper spheres, they were both useful; but the opponents were not to be reconciled, and the etherists, on the declaration of Dr. Knapp, of New York, of his conversion to the use of ether, were generally considered to have secured a victory. Southern American surgeons now felt called upon to state the grounds for their preference for chloroform, and in October, 1887, Dr. Hunter M'Guire, of Richmond, Va., read a paper, "The Choice of General Anæsthetics," before the Medical Society of Virginia, in which he gave an account of his great experience with chloroform whilst Medical Director of the famous "Stonewall" Jackson Corps, Army of Northern Virginia, C.S.A. His enormous total of 28,000 consecutively successful chloroformizations could not be either ascribed to chance or ignored; neither could it be asserted that a drug was inherently dangerous which could be freely administered without a death to 28,000 consecutive patients, very many of whom, as was the case with their great leader, had, prior to inhalation, suffered enormous loss of blood, and the great majority of whom had suffered privations and hardships, and undergone fatigues that have made their corps immortal. In the same year Dr. Julian J. Chisolm read before the Baltimore Academy of Medicine his papers, "Chloroform, the Best of Anæsthetics," and "A Very Valuable Lesson for Those Who Use Anæsthetics"—papers telling of his 10,000 successful administrations of chloroform as both a military and a civil surgeon.

At home the question was very pronouncedly brought before the profession and the public by a philippic in the *Lancet* of September 15, 1888, against the use of chloroform, in which, commenting on the death of six patients whilst under chloroform anæsthesia, our contemporary hysterically demanded—"Was there any reason why ether could not have been used instead of chloroform?" In the following issue the journal contained a letter from Mr. Foy, whose series of articles on "Anæsthetics" were then commenced in our pages, in which he protested against the tone of the *Lancet's* leader, and argued that it was not the part of a scientific paper to raise a popular outcry against a valuable medicinal agent—one which he considered to be the best anæsthetic we possess. He stated that the greater number of deaths under chloroform narcosis were due to faulty administration, and therefore avoidable. The letter called forth a reply, and produced a considerable amount of correspondence. The very positive assertions of the *Lancet* on the danger of chloroform finally brought a letter from Surgeon-Major Lawrie, stating that he had had 50,000 chloroformizations done under his charge without the loss of a single life, and the very important announcement that his Highness the Nizam of Hyderabad had authorized him to place £1,000 at the disposal of the *Lancet* for the purpose of defraying the expenses of a representative from that journal to examine, with the scientific experts of Hyderabad, the properties of chloroform as an anæsthetic. Dr. Lauder Brunton was selected, and the Commission is over. The experiments were such as should satisfy the most exacting. To quote the *Lancet:* "The experiments were of two kinds; those of one group being made without recording apparatus, and being intended to ascertain what influence is exerted by various conditions upon the

relation between the stoppage of heart and of respiration, and the limits within which artificial respiration and other means of resuscitation are useful.

"The second group consisted of experiments with recording apparatus, and were made for the purpose of ascertaining the effect of various conditions upon the heart and blood pressure." Chloroform was given in all sorts of ways, with the invariable result that the respiration stopped before the heart. The Commission drew up fourteen practical conclusions, which may be summarized as follows: The recumbent position on the back and absolute freedom of respiration are essential. Tight clothing of every kind should be avoided. An apparatus is not essential. A convenient form of inhaler is an open cone, or cup, with a little absorbent cotton inside at the apex. At the commencement of the inhalation care should be taken, by not holding the cup too close over the mouth and nose, to avoid exciting, struggling, or holding the breath. As a rule, no operation should be commenced until the patient is fully under the influence of the anæsthetic. The administrator should be guided as to the effect entirely by the respiration. If breathing becomes embarrassed, the lower jaw should be pulled or pushed from behind the angles forward. Alcohol may be given with advantage before operations under chloroform, provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation. Suspended respiration is to be treated by artificial respiration and lowering the head. They add that "the Commission has no doubt whatever that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

It is very gratifying to us to see such a clear and unequivocal confirmation of the views on the safety and value of chloroform so recently put forward in this journal by Mr. Foy; and we would particularly draw our readers' attention to the practical identity of the rules drawn up for the administration of chloroform by Mr. Foy and by the Commission. There is occasion neither for addition to the rules as they appear in "Anæsthesia, Ancient and Modern," nor for alteration in them. When Mr. Foy's views on chloroform were published, ether was the favorite anæsthetic; and in formulating rules for the administration of an unpopular drug, the author of "Anæsthetics" had much professional prejudice to contend against. Now that the most carefully conducted series of experiments that have, perhaps, ever been made in practical therapeutics so fully confirm the correctness of his opinion, we have little doubt that his book will become the most popular monograph on anæsthetics with both students and practitioners.—*Dublin Journal Med. Sciences.*

TOO MANY LECTURES.

We have adverted before to the growing custom among our most advanced schools of medicine of substituting for the large number of didactic lectures formerly given, practical work of various kinds. The time will come when laboratory work will be first, and lectures merely supplementary, instead of *vice versa*, as at present. Many years ago, when physicians had from one to five students under them, the instruction was almost wholly practical—crude 'tis true, yet practical. Then, with the multiplication of schools, the pendulum swung to the other extreme; but now it would seem that the tendency is towards the "golden mean."

Canada is also waking to the necessity of less lectures, and several of its schools have already made radical changes in the curriculum. The faculty of McGill University, however, though desiring to modify its curriculum by substituting practical work for many of the lectures now given, is handicapped by the Ontario Medical Council, which refuses to permit of any changes.

Dr. MacDonnell, in the opening address this Fall, says to the students: "The excessive time devoted to didactic lectures is the worst feature in our Canadian system of medical education. There is no country in the world where so many lectures have to be attended. When your brain is weary with much listening, your fingers cramped with note taking, your ischial tuberosities worn away from much sitting, do not entertain hard feelings against the Faculty, but remember the provincial boards." *Times and Register.*

THE FATE OF PATHOGENIC MICRO-ORGANISMS IN DEAD BODIES.

Dr. E. v. Esmarch (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) finds that there is a comparatively rapid disappearance of the pathogenic microörganisms from the dead bodies of animals who have died of bacterial diseases. His experiments also show, where the dead bodies are placed in water or buried, that the water or earth surrounding them does not become infected. In the case of anthrax, substantiating the observations of Feser, he finds that the bacilli die out very rapidly from the dead bodies of the host.

That this disappearance is not due alone to the crowding out of the pathogenic bacteria, by the microörganisms of putrefaction, is shown by preserving tissues, containing pathogenic bacteria from dead animals, antiseptically. In this case the pathogenic organisms disappear; but it is true they remain present longer than where they are made to contend with the putrefactive bacteria.

E.'s conclusions, in accord with nearly all German observations, are that the proximity of cemeteries, and the drainage and ground water from the same, have no effect upon the spread of epidemic disease.—*Medical News.*

TRANSPLANTING TUBERCULOSIS.

The State Board of Health of California has been greatly exercised over the danger to which it believed the State is exposed through the immigration of a large number of persons suffering from tuberculosis. It even suggested, in a recent bulletin, the advisability of establishing a strict quarantine against consumptives until measures of isolation and disinfection could be undertaken. The daily press of San Francisco has not been slow to take up the question, and the result has been a scare and sensation of such magnitude that even the proposed prize-fight has been for the moment forgotten.—*Medical Record.*

PRACTICAL NOTES.

AMENORRHŒA CURED BY FRIGHT.

Dr. E. T. Collins reports in the *British Medical Journal* the following case of re-established catamenia, resulting from a profound mental impression, namely, fright by a tramp: A healthy, robust girl, unmarried, aged 35 years, suddenly ceased to menstruate, two and a half years ago, without apparent cause. No suspicion or indication of pregnancy was present. She did not complain of any subjective symptoms, except monthly, when slight headache, backache, and malaise were felt for a few days. Medical treatment gave no results. Last June, returning in the evening from a country walk, she was suddenly alarmed by a tramp on the roadside. The catamenia commenced that evening, and has continued normal at the last three periods.

CODEINE IN OVARIAN PAIN.

Dr. Freund, of Strassburg, has recently used codeine in a large number of cases of abdominal pain from various causes, with the view of testing the assertions of Dr. Brunton that the drug is of especial use in intestinal or pelvic pain. His results seem to indicate that Brunton's views are somewhat exaggerated.

Pain from acute uterine affections, such as dysmenorrhœa, Freund found, was not as quickly relieved with codeine as with morphine, and the relief was of shorter duration. In pain from pelvic exudates and tubal disease the drug was also of but little value. In ovarian pain, however, whether from prolapse, oöphoritis, perioöphoritis, or neuralgia, the relief afforded by codeine was prompt, unmistakable, and more or less permanent even when small doses were given. The amount usually administered was about half a grain three times daily in pill form, and in but few cases was it necessary to increase this quantity. His experience coincides with Brunton's that no disagreeable or harmful effects follow the use of the drug. It does not stupefy, diminish the appetite, nor constipate. He prescribes the pill for one month after an attack of ovarian pain, and warmly recommends the drug for the above conditions.- *Therapeutische Monatshefte*, November, 1889.—*Medical News.*

GERMICIDES.

A series of experiments have been carried out with a view of ascertaining the smallest quantity of any antiseptic substance which is capable of preventing the development of the bacillus of typhoid, cholera, and tuberculosis. The culture of the typhoid bacillus was prevented by 1 part of corrosive sublimate on 20,000 parts culture medium, one part of sulphate of quinine on 800 of culture medium, 1 part of carbolic acid on 200, 1 part of hydro-chloric acid on 105 parts of chloride of lime on 100 parts of culture medium. The cholera bacillus (coma bacillus of Koch) will not develop in an acid medium. One drop of a one-per-cent. solution of hydrochloric acid prevents it. Its development is also prevented by 1 part of corrosive sublimate on 100,000 parts of culture medium; 1 part of sulphate of quinine on 5,000 parts, 1 part of sulphate of copper on 500 parts, and one part of carbolic acid on 400 parts of the culture medium. Many substances such as salol, ether, chloroform, fluoride of sodium, iodoform, etc., hinder remarkably the culture of the bacillus of tuberculosis, but those which sterilize the culture medium of this bacillus completely are hydro-fluo-silicic acid, ammonia, fluo-silicate of iron, fluo-silicate of potash, polysulphide of potassium, and silicate of soda.—*American Prac. and News.*

THE TREATMENT OF NÆVUS BY COLLODION.

At a recent meeting of the Midland Medical Society of England, Mr. Thomas showed three cases of nævi treated by the application of collodion—one in the back, another in the parotid region, and a third over the anterior fontanelle in a young infant. Collodion was painted over them and the skin in the vicinity, the application being usually carried out by the mother. In all considerable improvement had resulted, rendering further treatment by operation unnecessary. He pointed out the absolute freedom from risk or danger, and the advantages it offered in some situations where almost all methods were unsafe.—*Birmingham Medical Review.—Medical News.*

PRECAUTIONS TO BE OBSERVED IN PERCUSSION.

Probably many good auscultators exist for one good percussor. The note obtained in percussion is often very complex and difficult of analysis, the more difficult being of short duration. Pitch and quality are hard to separate. Moreover, percussion is usually badly taught by instructors. Not to weary you with the well-known advice regarding the mode of striking a quick blow, I wish to call attention once more to the great need of comparing the results of lighter and heavier blows, and also of examining the patient standing, and with the body naked when possible. I wish also to emphasize the value of the much-neglected study of the sensation conveyed to the finger used as the plexiometer. By this finger the sensation of resistance will often give a better idea of the level of fluid than the ear. In children's chests the sensation is of especial value, since their elastic chests often give notes from both sides. It is, moreover, remarkable what slight differences of pitch and quality may thus be appreciated.—J. W. Roosvelt, M.D., in *Medical Record.*

SOCIETY PROCEEDINGS.

New York County Medical Association.

Stated Meeting, February 17, 1890,

THE PRESIDENT, GEORGE T. HARRISON, M.D., IN THE CHAIR.

PRESIDENT'S ADDRESS.

Dr. Harrison, Vice-President, on assuming the position made vacant by the death of Dr. Charles S. Wood, made an address, which was in part as follows:

Charles S. Wood is no more, and in his death this Association has received an irreparable loss. But a month has passed since your suffrages called him to this presidential chair for a second time. Few of you who then saw him imagined that they should never behold his noble and serene countenance again. He was urged by those bound to him by the closest ties of love and affection not to go to that meeting, as he was visibly failing in health and symptoms of a threatening character had manifested themselves. But such was his devotion to the interests of this association that he felt that he must be present, cost what it would of personal sacrifice.

With fond anticipations he looked forward to this occasion, when in his address he would tell you in eloquent terms what this association had accomplished in the last twelve months, and in burning words would unfold his hopes and aspirations for its future welfare. But it was not to be; his work on earth was done. The language which Carlisle applies to his father is singularly appropriate here. "As for the departed," he remarks, "we ought to say that he was taken home 'like a shock of corn fully ripe.' He had finished the work that was given him to do, and finished it (very greatly more than the most) as became a man. He was summoned, too, before he had ceased to be interesting—to be lovable."

If we follow his career from boyhood to its closing scenes it will be found that he discharged the duties of life with rare fidelity. Whether we consider him as scholar, teacher, surgeon in the field in war-time, or in the "piping times of peace," as active practitioner or presiding officer of a scientific body, alike in all circumstances, he was industrious, faithful and upright. Dr. Wood had an eminently judicial mind, and this, with his extensive knowledge of parliamentary law, rendered him remarkably well qualified for the duties of a presiding officer. He was singularly free from all affectation, and had a healthy, well-balanced mind. He was very decided in his convictions and expressed his opinions fearlessly, but there was no bitterness in his judgments. With special predilection he devoted himself to the study of surgery, physiology and medical jurisprudence. He was a man of modesty and true dignity. Above all, religion was his pole-star, and kept him true in all the distractions and vicissitudes of life. "*Extinctus amabitus idem.*"

A retrospective glance at the work done by our association during the past year affords abundant proof of gratifying progress. In this time we have added 183 new members, making our roll number 480 names at the end of the year. A number of excellent papers have been read before the association, and the discussion upon them, as a rule, has been marked by thoroughness and earnestness. The large attendance upon the meetings fully attests the interest of the Fellows. The report of the Treasurer, too, furnishes tangible proof in another way of the continued interest of the Fellows in the success of our organization. Let not this success be an inducement to supineness, but, on the other hand, let it be an incitement to put forth greater effort to increase the power and usefulness of this association.

THE DEATH OF DR. WOOD.

The following resolutions were adopted:

Resolved, That by the death of our President, Dr. C. S. Wood, our association has been deprived of one of its earliest and most valued members—one whose constant presence rendered its labors more efficient and whose counsel warned against many dangers.

Resolved, That his industry and zeal were always an example to us, his contributions to the work of the association of a high order, and, further, that his deportment dignified its objects.

Resolved, That in tendering our condolences to his family we trust that their grief may be tempered with the remembrance of his many excellent traits and abundant virtues.

THE LATE DR. LEWIS HALL SAYRE.

The following minute was also adopted:

The sadly sudden death of Dr. Lewis Hall Sayre enrolls another name in the memorable list of those who have nobly laid down their lives in devotion to the duties of our profession.

In the very flower of early manhood the brilliantly promising career opening before him is closed in this world by an act of self-sacrifice as heroic as aught that history tells of warlike prowess. The call to relieve another's suffering found him regardless of his own, and, thinking only of the good deed to be done, he perished in its unselfish doing.

No greater meed of praise can earthly chronicle record than that a man so honored his high office as to give his life for it, no better assurance of the heavenly welcome to a good and faithful servant.

This Association, to the expression of its own grief at the loss of an associate whose qualities of heart and mind commanded affection and re-

spect, desires to add its profound sympathy with those who are bereaved of the son, brother and husband in whom their loss and pride were justly centered.

INTERESTING SURGICAL CASES.

Dr. T. H. Manley presented two patients upon whom he had recently operated. The first was an infant, six months old, who had had an undescended testis. He opened the canal and brought down and secured the testicle, and the result had been very satisfactory. This was the second case of the kind, he said, in which he had operated. The second patient was a young man who had been injured in the head by the accidental discharge of a parlor rifle. The ball had entered near the left superciliary ridge, and an incision was made at this point. The ball, which was found just over the sphenoid fissure, was extracted, and it was ascertained that the orbital plate of the frontal bone was shattered. Four or five fragments of bone were removed, but the eye was preserved. No cerebral symptoms whatever had developed, and the recovery, which had been very rapid, was now complete, with the exception of some slight disturbances of vision, which it was hoped would, ere long, disappear.

A paper by Dr. Edward von Donhoff, on

THE RADICAL CURE OF HERNIA,

was read by Dr. Milliken, Dr. von Donhoff having been suddenly called to Europe.

The curable variety of hernia, *par excellence*, aside from the anatomical situation of the lesion, the writer said, was that which occurs in the young and robust, and is presented in its recent condition for treatment. Among the cured were a few instances of spontaneous recovery, and it was more than probable that many of those seemingly aided by orthopædic apparatus would have progressed quite as well without it. In other cases nature brought about a safe condition for the subject of hernia, because the sac, being small, was confined to a narrow space, and, becoming firmly adherent and greatly thickened, afforded a more reliable safeguard than any mechanical adjustment that has as yet been devised. Very rarely had he known strangulation to occur within a sac of this description, and he said that if he should meet with such a case in the future he would content himself with relieving the stricture and (instead of amputating) endeavoring to bring about union at the point of necessary incision of the sac.

The only two good reasons for operative interference were (1) the existence of strangulation of the contents of the sac, or incarceration not relievable by taxis, etc., and (2) a dangerous condition growing out of causes other than strangulation, such as hæmorrhage into the sac, suppuration of the sac or its contents, or great size and cumbersomeness of the mass amounting to not merely a mechanical disability, but a menace to the patient's reason or life. Whenever a subject of any description suffering from strangulation or any other mischievously suggestive condition was presented for operation, an attempt should be made at radical cure, except when atrophic changes existed in the structures which it was necessary to unite. In nearly all cases it would be necessary to apply a ligature and amputate the sac, or, preferably, amputate and nicely join with numerous sutures the edges of the lumen. If the sac, however, were quite small and of normal appearance, it should invariably be returned intact, unless the treatment of its contents required an incision into it.

He believed that any method of treatment which involved the direct or indirect massing together of a heterogeneous collection of tissues, regardless of their histological peculiarities, would necessarily be attended with failure, and he said that he made this criticism with less hesitation from the fact that some years ago he reported a series of thirty-four cases in which the method pursued had similar technical faults. All of these which he had been enabled to follow up after the operation had been marked by a return of the hernia, after a very deceptive apparent cure, in a more formidable character than before. In this series of cases the *modus operandi* was as follows: The sac, having been exposed, was cut off close to the ring and the remaining lumen was closed by a sufficient number of sutures so placed as to include all overlying structures and the pillars, as well as the stump of the amputated sac. A number of auxiliary retention sutures completed the operation.

The causes of failure in these cases he believed to be: 1. Apposition of heterologous tissues. 2. Consequent abnormal cicatrization. 3. Resorption of effused plastic material and deciduation of tissue strata. 4. Recurrence of the extrusion because of the disappearance of the temporary support afforded by the semi-organized plastic mass plugging the lumen of the sac and developed as a part of the healing process, but now no longer continuous with the tissues which had become deciduated. After the operation he had made the mistake of furnishing most of the patients with a light truss, and he could not now but regard this as having had a most injurious effect upon the new cicatricial connective tissue formations. Eleven of the cases he had the opportunity of observing for a longer time than the others, and among these the average duration of apparent recovery was less than three months. In the remaining twenty-eight the time was probably much shorter, since they were individuals exposed to the dangers of severe physical exertion.

As to the McBurney operation for the radical cure of hernia, he had had the opportunity of in-

specting the case-book of the outdoor department of the Hospital for Ruptured and Crippled, and so was enabled to speak with some degree of accuracy of certain results following this procedure therein recorded; although, of course, he could not estimate from this the proportion of failures in the total number of cases operated on. Having briefly described Dr. McBurney's operation, he said it was evident, from the results he had seen, that no fixed massing of tissues occurs between the pillars. As soon as this resorption was perfected the possibility and probability of the recurrence of the extrusion would be established. In the instances in which the cicatricial formation was scant, the prospect of immediate failure was greatly enhanced. It was relatively a piece of good fortune if permanent closure of the lumen of the ligatured and amputated sac was secured, and thus the possible added danger of a gut extrusion lacking that covering avoided.

No direct effort at closing the intercolumnar space was prescribed by the operation technique, unless the auxiliary sutures were so regarded. A not too remotely possible danger was complete disruption of the cicatricial barricade, especially if the mass should be subjected to much adventitious pressure by trusses, etc. It might also happen as an acute accident immediately following the recovery from the operation. He did not know that such an occurrence had been met with in any instance in which the McBurney operation had been done; but it was a perfectly rational possibility attendant upon any method looking for repair of the hernia breech and operation wound to a granulation process, and not directly contemplating the closure of the intercolumnar, or a similar, space by a close and permanent approximation of homologous physiological tissues.

The next portion of the paper was devoted to a description and condemnation of Dr. J. D. Bryant's operation, the special feature of which is the platting of the sac, from side to side, through a number of longitudinal slits made in the columns. In closing Dr. von Donhoff said that in such cases of inguinal hernia as were modified by very large openings, he had suggested a subcutaneous relaxation incision through the abdominal muscular planes (external and internal oblique muscles), for the purpose of permitting easy approximation of the edges of the ring after the necessary paring of the edges of the gap. He knew now that Bergmann, Esmarch, and other German surgeons were practicing a similar manœuvre; but, despite even this resource, in a certain proportion of this class of subjects any plastic operation must fail, because of the widespread character of the atrophic changes present.

Dr. W. B. De Garmo said that when the McBurney operation was first introduced he had very little faith in its efficacy; but he was free to confess that he had been surprised to see how many good results were reported from it. At the same time, he was still of the opinion that even this operation was not destined to have a long life, and he believed that eventually it would be found to be attended with as many failures as those which had preceded it. His experience confirmed that of the author of the paper as to the great difficulty of properly adjusting mechanical appliances in cases of operation where the hernia had afterwards returned. The paper was unsatisfying in that it left the whole subject very much where it was before. In the treatment of hernia he himself had perhaps had as much experience as any one in the country, and the only reason that he did not advise operation was because he had no faith in such a procedure resulting in permanent cure. He did not wish to be understood, however, as opposing an operation in all cases. There was one class of cases in which he would advise it, viz.: irreducible hernia; provided the patient were in suitable condition. But to operate in cases in which the hernia could be readily returned and could be kept up in position by a truss he did not believe was justifiable.

The operation which for the last two years he had himself employed in cases where operative interference was called for was that of Barker. He did not believe that anything was gained by destroying tissues, even if they were poor tissues, and he had selected this operation for the reason that if it did not prove successful it would not leave the patient in a worse condition than he was before. It consisted simply of clearing the canal of all foreign bodies (whether omentum or anything else), and then closing the canal; the external wound being closed by first intention. The healing process was rapid, and was usually completed in ten days.

Dr. Charles McBurney said that the actual cause of hernia, and that which acted continuously in keeping it up when once started, was the natural peritoneal pouch. This existed in almost every individual, and it led to a natural deposit of the intestines, and pressure therefrom, at that point. In operating in cases of hernia where such a procedure was called for his aim had been to get at the root of the evil, and to operate in such a way that the original conditions causing and maintaining the trouble should be removed. The tissue between the pillars on which so much stress had been laid in the paper was a myth which had been bothering surgeons for many years. It was absurd to expect to cure a hernia by simply fastening up the bottom of the sac at the external ring, which was situated a considerable distance below the real seat of trouble. If we wanted to effect a cure it was essential that we should remove the pouch entirely, for if the operation involved only the external ring we left the whole of the neck of the sac in the canal, extending up to the internal ring.

He could not see why Dr. von Donhoff should put back a sac simply because it was small. A small sac was liable to become a large one, and to involve the patient in the greatest possible danger. It was very evident to his mind that the one great reason why, in all the thirty-four cases referred to in the paper, there had been a relapse within three months, was because in all of them the operation was at the external abdominal ring. The explanation was simple. A portion of the sac was left; and just as sure as any part whatever of the sac remained, just so surely was it liable to become enlarged and give rise to a recurrence of the hernia.

The main idea of the method with which his name was associated was to get rid of the sac at the very highest point and to absolutely obliterate it. This had the effect of reducing the peritoneal lining at the internal abdominal ring to a level with the rest of the peritoneum, and thus did away with the tendency to pouch at this point. In order to give the requisite support from below he had endeavored to blend together, by a cicatricial process, all the tissues in the canal in the most thorough and complete manner. In the notice of his operation in the paper one very essential point had been entirely omitted. This was the drawing together of the skin and subjacent tissues to such an extent that a space only about $\frac{1}{8}$ of an inch was left; that is, the smallest space that would admit the packing of iodoform gauze. The effect of this gauze packing was to secure healing from the bottom of the wound, and the process was purposely slow. The result was a very dense and strong cicatricial tissue.

He should be very unwilling to claim that this operation was an infallible cure for hernia. As to the cases of it referred to in the paper as failures, he did not know who had been the operators or anything about the circumstances connected with them; and Dr. von Donhoff's statements were certainly very vague and indefinite concerning them. He had himself seen some relapses, but they were exceedingly few, and in all the cases except one the relapse could be fully accounted for by certain existing circumstances which imperiled the success of the operation. But even if there had been other relapses, with which he was at present unacquainted, he would still believe that the principle on which the operation was based, to strike at the root of the trouble, was sound. The probabilities were that we should never have an operation which would make an individual better than he was originally, and he did not think a procedure could be devised which should be absolutely free from recurrences. In closing his remarks Dr. McBurney exhibited five patients in whom his operation had been followed thus far by brilliantly successful results. Most of the cases were of two years' standing, and in two of them there had been a double operation.

Dr. T. H. Manley said that during the past year he had performed the McBurney operation seventeen times, in all sorts of cases and on patients ranging from 73 years to less than 73 days old. Two of the patients had died, but they were in fact moribund at the time the operation was performed; and in all the others the result was perfect up to the present time.

Dr. A. P. Dudley said that the secret of Dr. McBurney's great success was that he went beyond other surgeons, and cut off the sac at the internal ring. The failure in many operations he believed was due to the fact that the operation was delayed too long. When a hernia was allowed to remain for many years the pillars of the ring were apt to become enormously dilated; and the difficulty of operating thus became very greatly enhanced.

When the discussion was concluded Dr. N. G. Bozeman exhibited an ingenious apparatus for the irrigation of deep cavities.

NECROLOGY.

A Tribute to the Memory of Dr. Charles S. Woods.

Report of a special committee to the Society of Medical Jurisprudence and State Medicine:

It becomes our painful duty, as a committee appointed by the Board of Trustees, to announce to the Society the loss of one of its most prominent members, and one of its founders, in the death of Dr. Chas. S. Wood. To those of you who remember the early history of this organization, the causes which led to its foundation and who recognized its early struggles for success, it is needless to mention the deceased as one of those energetic men to whom that success is in a great measure due. His gentle and suave manners helped to expedite the completion of the work, planned and conceived by a few whose ideas of right and liberty were totally at variance with the devious and irreconcilable practices of the officers of the parent Society, whose offspring though we unfortunately be, yet we have outstripped in the race for the promulgation of scientific facts and data. Of that parent, Dr. Wood was one of its most hard working members and become by his worth and endeavors one of its most honored Presidents. Always striving to do right, he expected truth and honor to be the motives of all, in the work to which his time and energies had been devoted. When he recognized that this work in others was but subsidiary in them to the purpose of a personal aggrandizement he with others animated by his own sense of honor rebelled, and sought to find in this Society a field for the investigation of scientific

facts untrammeled by parliamentary bickerings and personal quarrels.

Although he persistently refused all offers of office, he took a keen interest in all matters relating to the Society's good and was a worker in the administration of its affairs. Had he lived longer he would have been compelled by his friends to have accepted the highest office which it is in the power of this Society to bestow.

Not only was his voice heard on all questions of policy but he was ever prepared to speak on the scientific subjects which were brought before us. We all remember his modulated, melodious voice harmonizing so well with his gentleness of character, and shall miss his ready argument and quiet humor.

Our loss cannot be replaced and, though forgetfulness is ever the attendant of those busy with their own aim in life, Dr. Wood will ever live in the remembrance of those, however occupied, who called him colleague and friend.

Dr. C. S. Wood was born in Litchfield, Conn., on the 27th day of February, 1825. After having taught school for a time he was graduated from the Jefferson Medical College of Philadelphia as a Doctor of Medicine. He entered upon the practice of his profession in Greene, Chenango Co., N. Y. When the war broke out he offered his services to the Union and was commissioned as Asst. Surgeon in the Sixty-sixth New York Regiment, and later as Asst. Surgeon U.S. Volunteers. After having served in all the battles of the Potomac until the time when Grant took command, he was transferred to the Staff of Gen. Wright and proceeded to San Francisco. The general hospital of the Presidio at that place was under his charge, and at the end of the war he was ordered to Alcatraz Island in San Francisco Bay. Soon after this he returned to New York (1867), and has made his residence here ever since.

Such in brief was the life history of the man who was one of the most earnest of our Society. Conservative, and yet ever ready to adopt reasonable innovations, he could not be moved from the path which reason and personal experience told him to be right. He was made of so firm a mould that one could ever rely upon his taking the side of truth and justice even when every other interest was opposed. In him we have lost so firm a support that our expression of condolence to his family is but an insufficient tribute to his worth, and the following resolutions, which I hope the Society will take the necessary steps to adopt, to have spread on the minutes, and to have transmitted to the deceased member's family, are inadequate utterances of our loss. No more will his genial face be seen in our midst; of him we have but the memory, yet his work will live.

Be it by the Society of Medical Jurisprudence and State Medicine

Resolved, That in the death of C. S. Wood, M.D., this Society has sustained a loss whose weight falls heavily upon us, a loss which never can be replaced. Be it

Resolved, That this Society recognize the probity and purity of the deceased, who was ever watchful of our affairs, who aided us with his judgment, and taught us from his wide experiences. Be it

Resolved, That the science of medical jurisprudence is deprived, by the death of Dr. C. S. Wood, of one of its ablest votaries and brightest lights, of a man of eminent abilities and stern integrity.

N. E. Brill, M.D.,
E. C. Spitzka, M.D.,
A. M. Jacobus, M.D.,
Committee.

Charles B. Goldsborough, A.M., M.D.

Dr. Goldsborough, Surgeon, U. S. Marine-Hospital Service, was born at Elkton, Cecil County, Md., December 10th, 1850. After a preparatory course at a classical school in Baltimore and at the Episcopal Academy in Philadelphia, he entered the classical department of the University of Penusylvania in 1868, and was graduated in June 1872 with the degree of B.A. Besides being the orator of his class, he was subsequently appointed instructor in Latin and Greek at the Episcopal Academy. About this time Dr. Goldsborough entered the medical department of his alma mater, and was graduated with honor March 10th, 1876. He now received the prize for the best class essay, the subject being salicylic acid, and also the Hodge gold medal for the best record in the dissecting room. He was then appointed assistant demonstrator of anatomy at the University, and was elected a member of the Pathological Society. In April, 1876, he received the appointment of resident physician in the Episcopal Hospital, Philadelphia, and served the full term of sixteen months. On the completion of his tour of service at the hospital Dr. Goldsborough appeared before the examining board of the Marine-Hospital Service, and passed first in a large class of applicants. He was appointed Assistant Surgeon, September, 1877, Passed Assistant Surgeon, October, 1880, and Surgeon, September, 1886. He served at various stations, on special duty at Washington and elsewhere to 1879. At Baltimore from 1879 until March, 1882, next as Surgeon in Charge, at Mobile, Alabama, to October, 1885. From this date until February, 1888, he was in charge of the Marine-Hospital at Chicago, Ill. His final service was in charge of Marine-Hospital, New Orleans, where he died in harness, of heart failure, January 5th, 1890.

Dr. Goldsborough was a most efficient officer, thoroughly alive to the interests of the service in

every department. An excellent surgeon and well trained in hygiene, his great talent and experience produced a combination invaluable to the service.

His comrades regret his loss, and may well emulate his record. F. I.

ASSOCIATION NEWS.

The Annual Meeting at Nashville, May 20.

By special resolution the Permanent Secretary was appointed to obtain rates an all the lines of travel to Nashville. In order to have some basis upon which to make these arrangements it is necessary that he should be informed as to the number of those who may wish to avail themselves of this opportunity and also the roads or lines over which they must reach Nashville. Therefore, delegates and members are urgently requested to inform the undersigned at the earliest moment.

From the present advices it is believed that reduction of the rate will be sufficient to induce a very large attendance.

Wm. B. Atkinson, M.D.
1400 Pine street, Philadelphia, Pa.

Report of the Committee on Foreign Transportation.

To the Editor:—The Committee on Foreign Transportation have finally arranged as follows:

The Netherlands-American Steam Navigation Co. being the only line that would allow any reduction sufficient to be worth mentioning and on times of sailing suitable for our delegates agree to give us transportation to Boulogne, France, or Rotterdam, Amsterdam, Holland, from New York and return for $90 in first-class rooms inside or $105 outside, this *only* to *our own members* and *their families.*

Sailing from New York in May, June, or July as follows:

May 1st, 8th, 15th, 22nd, 29th, June 5th, 12th, 19th, 26th, July 3rd, 10th, 17th. Berths for May steamers must be engaged before April 15th; June, by May 1st; and July by May 15th. After these dates the company may dispose of all berths on said steamers not engaged. Of course those who secure berths first get the best places. All the steamers are alike in first-class accommodations.

For those who desire it, free passage will be granted from Rotterdam, Amsterdam via Flushing Queensboro' to London on the outward trip. The boats running between Flushing-Queensboro' carry the mail of Northern Europe to and from Great Britain. This route is the most direct and favorite one from London to Berlin, and the steamers are all elegantly furnished. There is a day and night service, the boats running in the night all have state rooms.

For reserving berths on the steamer from New York a deposit of $10 each person is required. The balance of the passage money must be paid at least two weeks prior to sailing.

These steamers cross in eleven to twelve days, some do it in less time.

Railroad fare from Rotterdam to Berlin, 1st class $13.60; 2nd class, $10.40; Amsterdam to Berlin, 1st, $13.70; 2nd, $10.50. Boulogne to Paris, 1st, $6.00; 2nd, $4.50.

The table and attendance on the steamers to be of the best.

Efforts are being made to obtain a reduction in the railroad fares as above. This will be announced in the Journal as soon as obtained.

(Signed) Wm. H. Pancoast, Ch'm. of Com.
W. B. Atkinson, Sec'y.

Those who have already notified the secretary of their intention to go to Berlin will in due time receive the proper certificate which will entitle them to these rates. Those who have not sent their names are requested to do so at an early date. Yours truly, Wm. B. Atkinson.
Philadelphia, Feb. 20th, 1890.

International Medical Congress of 1890.—Special Notice.

All those who propose to attend the session of the International Medical Congress in Berlin next August are requested to forward to the undersigned their names and the number of tickets they will require. Arrangements are now in progress to obtain special rates on the lines to Europe. For the committee,

Wm. B. Atkinson, M.D.,
Permanent Sec'y Am. Med. Ass'n.

Instructions to Delegates.

Members of the Association who design to attend the annual meeting at Nashville, May 20, 1890, will be granted a reduction in their return railroad fare only, under the following conditions:

First.—Each person must purchase a first-class ticket (either unlimited or limited) through to the place of meeting, for which he will pay the regular tariff fare, and upon request the ticket agent will issue to him a certificate of such purchase (Form 2).

Second.—If through tickets cannot be procured at the starting point the person will purchase to the most convenient point where such through ticket can be obtained, and there repurchase through to the place of meeting, requesting a certificate properly filled out by the agent at the point where the repurchase is made.

Third.—The reduced rate for the return journey will only apply to points to which through tickets are on sale at the place of meeting, and at which through tickets to the place of meeting were purchased. If through tickets to the starting point can not be procured at the place of

meeting, the person will purchase to the most convenient point to which such through ticket can be obtained.

Fourth.—Tickets for the return journey will be sold by the ticket agents at the place of meeting, at one-third the highest limited fare, only to those holding certificates (Form 2), signed by the ticket agent at the point where the through ticket to the place of meeting was purchased and countersigned by the secretary or clerk of the convention, certifying that the holder has been in attendance upon the convention.

Fifth.—It is absolutely necessary that a certificate be procured, as it indicates that the full fare has been paid for the going journey, and that the person is therefore entitled to the excursion fare returning. It will also determine the route via which the ticket for return journey should be sold, and without it no reduction will be made.

Sixth.—Tickets for return journey will be available for continuous passage only; no stop over privileges being allowed on tickets sold at less than full fare. Certificates will not be honored unless presented within three days after the date of adjournment of the convention.

Seventh.—Ticket agents will be instructed that excursion fares will not be available unless the holders of certificates are properly identified, as above described, by by the secretary or clerk, on the certificate, which identification includes the statement that one hundred or more persons, who have purchased full fare tickets for the going passage, and hold properly receipted certificates, have been in attendance at the meeting.

The certificates are not transferable, and the signature affixed at the starting point, compared with the signature to the receipt, will enable the ticket agent to detect any attempted transfer.

N. B. Please read carefully the above instructions, be particular to have the certificates properly filled and certified by the railroad agent from whom you purchase your going ticket to the place of meeting, as the reduction on return will apply only to the point at which such through ticket was purchased.

American Medical Association.

The forty-first annual session will be held in Nashville, Tenn., on Tuesday, Wednesday, Thursday and Friday, May 20, 21, 22 and 23, commencing on Tuesday at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, County and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association as shall make application to the Treasurer and accompany said application with a certificate of good standing, signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, five dollars. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the session of 1888:

"That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers."

Secretaries of Medical Societies as above designated are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send him annually a corrected list of the membership of their respective societies.

AMENDMENTS TO THE BY-LAWS.

Offered by Dr. A. L. Gihon, United States Navy.

That the first day of the meeting of this Association shall be on the first Wednesday of May or June respectively, instead of Tuesday.

By Dr. X. C. Scott, Ohio:

That the Committee on State Medicine be abolished, inasmuch as the Section on State Medicine occupies the entire ground.

ADDRESSES.

On General Medicine, by Dr. N. S. Davis, Chicago, Ill.

On General Surgery, by Dr. Samuel Logan, New Orleans, La.

On State Medicine, by Dr. Alfred L. Carroll, New York, N. Y.

Committee of Arrangements: Dr. William T. Briggs, Nashville, Tenn.

WILLIAM B. ATKINSON, Perm. Sec'y.

BOOK REVIEWS.

CLINICAL LECTURES ON VARICOSE VEINS OF THE LOWER EXTREMITIES. By WILLIAM H. BENNOTT, F.R.C.S., Surgeon to St. George's Hospital, etc. With Illustrations. London and New York: Longman, Green & Co. 1889. Chicago: A. C. McClurg & Co. Price $2.

These valuable clinical lectures, which in the main were published recently in *The Lancet*, represent the experiences of the author at St. George's Hospital between the years 1880 and 1888. The practical information contained in this little volume will be found of special value in the treat-

ment of varicose veins. It treats of the parts involved; of the probable causes; the complications which are to be found; the management of ordinary cases without operation, while the last lecture is devoted to the details of operative treatment both palliative and curative. While not claiming to be an exhaustive treatise upon varix, it nevertheless so fully considers the subject as to render it a very valuable manual in the hands of busy practitioners.

ESSAY ON MEDICAL PNEUMATOLOGY. A Physiological, Clinical and Therapeutic Investigation of the Gases. By J. N. DEMARQUAY, Surgeon to the Municipal Hospital, Paris, and of the Council of State, etc. Translated with Notes, Additions and Omissions, by SAMUEL S. WALLIAN, A.M., M.D., Ex-President Med. Ass'n. of Northern New York, etc. Pp. xv, 300. Net price, cloth $2, half russia, $3. Philadelphia and London: F. A. Davis. 1889.

This is an abridged translation of Demarquay's extensive treatise on the therapeutical application of the various gases, and contains an excellent account of the history, physiological action, preparation and administration of oxygen, together with a very brief note of the uses of nitrogen and hydrogen and a short review of the translator's own experience in the use of these gases. The work will form a useful addition to the somewhat meagre literature of the subject, particularly as regards the English language.

MISCELLANY.

LETTERS RECEIVED.

Dr. W. Frank Grinstead, London, Eng.; Dr. J. N. Dixon, Springfield, Ill.; The Illustrated Medical News Co., London, Eng.; Valentine's Meat Juice Works, Richmond, Va.; Kegan Paul, Trench, Trubner & Co., Ld,, London, Eng.; Dr. R. A. Martin, Jr., Petersburg, Va.; Dr. H. W. Quirk, Cleveland, O.; Dr. David S. Booth, Belleville, Ill.; Dr. T. L. Wright, Bellefontaiue, O.; Reed & Carnrick, New York; Dr. T. D. Crothers, Hartford, Conn.; National Folding & Enveloping Co., Chicago; Arch. Maxwell, Austin, Tex.; Myer Bros., St. Louis, Mo.; Woman's Medical College, Cincinnati, O.; F. C. Lewis, Catskill, N. Y.; W. P. Cleary, New York; Jefferson Medical College, Philadelphia; Fairchild Bros. & Foster, New York; Geo. Cheatham, Brooklyn, N. Y.; The American & Continental Sanitas Co., New York; Braidwood & Stahl, Keokuk, Ia.; Dr. J. H. Smith, Dallas, Tex.; Dr. C. Jane Vincent, Allegheny, Pa.; Jules Peelman & Cie., Paris, France; Dr. Geo. A. Zeller, Peoria, Ill.; Dr. G. C. Smith, Natick, Mass.; Dr. S. V. Ronsig, Roger's Park, Ill.; Dr. E. E. Russell, New York; R. L. Watkins, Prospect, O.; Dr. C. C. Leeper, Braymer, Mo.; Dr. Bane, Pittsburgh, Pa.; Dr. C. F. Stillman, Chicago; N. W. Ayer & Son, Philadelphia; Publishers Commercial Union, Chicago; Dr. T. S. Wescott, Philadelphia; Arkansas National Bank, Hot Springs, Ark.; Peacock Chemical Co., St. Louis, Mo.; Dr. O. H. Hall, Ionia City, Mo.; Dr. E. K. Nash, Montrose, O.; Dr. D. Rankin, Allegheny, Pa.; Rio Chemical Co., St. Louis, Mo.; D. Ayers, Syracuse, N. Y.; Dr. J. A. Webb, Providence, R. I.; Dr. Kilpatrick, So. Omaha, Neb.; Farwell & Rhines, Watertown, N. Y.; Dr. A. Reeves Jackson, Chicago; E. S. Burnham, New York; W. F. Holloway. Cuyahoga Falls, O.; Dr. E. Flether Ingalls, Chicago; Dr. R. Harvey Reed, Mansfield, O.; Dr. Mary H. Thompson, Chicago; Dr. J. A. Hinton, Friendship, Tenn.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 15, 1890, to February 28, 1890.

Capt. Samuel Q. Robinson, Asst. Surgeon, now on duty at Ft. Hamilton, N. Y., is relieved from duty in the Div. of the Atlantic, and will report in person to the Superintendent, U. S. Military Academy, West Point, N. Y., for temporary duty at the Academy, to relieve Capt. Wm. L. Kneedler, Asst. Surgeon. Par. 4, S. O. 43, A. G. O., February 20, 1890.

Capt. William L. Kneedler, Asst. Surgeon U. S. A., upon being relieved from duty by Capt. Robinson, will report at Jackson Bks., La., for duty at that station, relieving First Lieut. Freeman V. Walker, Asst. Surgeon. Upon being relieved, Asst. Surgeon Walker will report at Ft. D. A. Russell, Wyo., for duty at that station. Par. 4, S. O. 43, A. G. O., February 20, 1890.

PROMOTIONS.

Lieut.-Col. Joseph R. Smith, Surgeon, to be Surgeon with rank of Colonel. February 9, 1890.

Major Dallas Bache, Surgeon, to be Surgeon with rank of Lieut.-Colonel. February 9, 1890.

Capt. Philip F. Harvey, Asst. Surgeon, to be Surgeon with rank of Major. February 9, 1890.

LEAVE OF ABSENCE.

Major J. H. Patzke, Surgeon, leave of absence for seven days granted in order No. 25, Ft. Huachuca, Ariz., February 12, 1890, to take effect the 14th inst., is extended twenty-three days. Par. 1, S. O. 18, Dept. Ariz., February 17, 1890.

Major Leonard Y. Loring, Surgeon, having been found incapacitated for active service by an Army retiring board, the extension of leave of absence on surgeon's certificate of disability granted him in S. O. 34, February 10, 1890, from this office, is, by direction of the Secretary of War, still further extended until further orders on account of disability. Par. 3, S. O. 46, A. G. O., Washington, February 25, 1890.

By direction of the Secretary of War, a board of medical officers, to consist of: Major Charles Smart, Surgeon; Capt. Valery Howard, Asst. Surgeon; Capt. Louis Brechemin, Asst. Surgeon, is appointed to meet at Ft. Leavenworth, Kan., on March 15, 1890, or as soon thereafter as practicable, for the purpose of preparing a manual of drill and instruction for the members of the Hospital Corps, and to examine the equipment of the Corps with a view to its improvement. Par. 9, S. O. 47, A. G. O., Washington, February 26, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 1, 1890.

P. A. Surgeon C. W. Rush, ordered to the Navy Yard, New York.

P. A. Surgeon E. W. Anzal, ordered to the U. S. S. "Galena."

CORRIGENDUM.

On page 305, of the issue of March 1, line 13 from top of first column, the sentence commencing "Applications of a solution," etc., should read: "Applications of a solntiou of chloride of zinc to the affected *laryngeal* tissues and a correction of the deformed septum with a Bosworth saw soon yielded entire relief;" and should appear as a description of the treatment of Case 2.

THE

Journal of the American Medical Association.

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ADDRESSES.

HOMŒOPATHY AND MEDICAL PROGRESS DURING THE PRESENT CENTURY.

President's Address, read at the meeting of the Syracuse Medical Association, January 14, 1890.

BY NATHAN JACOBSON, M.D.,

PROFESSOR OF CLINICAL SURGERY AND LARYNGOLOGY, COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY.

I purpose, this evening, directing your attention to homœopathy, and particularly to its principles as enunciated by Hahnemann and the manner in which they have been influenced by medical progress, and briefly to compare its achievements with those of scientific medicine during the present century. To appreciate fully the condition that made homœopathy a possibility, it is necessary that we consider the tenor of medical thought and teaching during the eighteenth century.

The eighteenth century was the age of systems and theories. There existed an abundance of material obtained from observation and the natural sciences, but it remained undigested. One hundred years before, Sydenham had written: "The improvement of physic, in my opinion, depends first upon collecting as genuine and natural a description and history of disease as can be procured; second, upon laying down a fixed and complete method of cure." But the profession failed to pursue the paths of careful observation, and had been led to believe that some fixed law controlled the development of all forms of disease, and innumerable theories were propounded to explain the occurrence of all diseased manifestations. A few will illustrate the tendency of the age.

Stahl created the dynamico-organic system. The soul was made the supreme principle of disease which alike causes and cures. Stahl scorned anatomy and physiology, and was an enemy of erudition and authorities.

Hoffmann introduced the mechanico-dynamic system. In the body, he taught, life expressed itself in motion. Death was the cessation of all movement. But these mechanical phenomena, in their normal and abnormal manifestations, were controlled by a nervous spirit, which he saw fit to define as "the æther."

Then there was the school of Montpelier, which taught that the various organs possessed an individual life—that the stomach, heart and brain formed the "tripod of life." As the vital principle was the cause of all phenomena of life in the human body, all disease was the result of an affection of the "vital force." In Germany a more energetic school endorsed the doctrine of vital force, believing that an inseparable union of force and matter existed in the various organs of the body.

Darwin also had a system uniting, in some ethereal way, spirit and matter, as a result of which there occurred in the human body vital, periodic and chemical movements.

Mesmer, too, that prince of imposters, posed as the apostle of a new doctrine, claiming that everywhere throughout nature the magnetic fluid flowed from the hand, pouring out its healing influences upon all susceptible to it.

The Brunonian system received many supporters. It was unnecessary to make any special diagnosis; it required no fixed symptomatology; it made no distinction between local and general diseases. All that was required was to determine the grade of disease in accordance with the strength or weakness of the active irritation. The art of the physician was simply to adjust the right proportion of strengthening or weakening medicines to the case; to determine whether the condition was sthenic or asthenic, and act accordingly.

It is unnecessary to refer to the phlogistic and antiphlogistic theories; to the doctrine of infarction, or, in reality, fæcal impaction, as a universal cause of disease; to Cullen's theory of nervous force, or the efforts made by the old Vienna school to create a place for clinical instruction. It is but necessary to remind you further that chemistry was merely a suggestion of its present self, oxygen having been but discovered; that physiology, pathology and histology existed but in their merest infancy; that, more than all, the bitterest opposition of the different theories existed toward each other. In this chaotic age, when real investigation had been neglected and speculative philosophy seemed to take possession of even the best minds, another theorist announced another universal hypothesis for the development and cure of disease.

Samuel Hahnemann was born in 1755 in Meissen, Germany, pursued his studies at Leipsic and Vienna, and graduated in 1779 at Erlangen. It is said that, being dissatisfied with the discordant theories and methods of treatment of his time, he abandoned practice and sought seclusion for reflection and study. In 1790, just 100 years ago, he promulgated his first writings. It was then that Cullen's Materia Medica had been translated into German, and in it, for the first time, occurred the recommendation of Peruvian bark for malarial difficulties. This awakened in Hahnemann's mind the idea that the virtue of the drug depended upon its ability to excite malarial symptoms in a healthy man, the proof of which he claimed to have established in his own case. With this, then, fixed in his mind as the fundamental hypothesis of drug administration, he resumed his practice in 1796.

He began at once to write largely, addressing himself alike to the laity and the profession, and received as students, to whom he delivered lectures, all applicants, irrespective of any or no previous medical education. In 1805 he first used the term "homœopath," and referred to those pursuing any of the many other systems in vogue as "allopathists."

His main work, the "Organon der Rationellen Heilkunde," appeared in 1810. Besides being a polemic against medical practice of his day, it contained a full statement of his own theories. His other works were "Reine Arzeneimittellehre," published from 1811–1821, and his last large work on "chronic diseases," which appeared in 1828.

As it has been possible for me to obtain of his works only the Organon, to thoroughly elucidate his doctrines I shall have to refer additionally to reviews of his other literary productions written by Jürgensen, entitled "Wissenschaftliche Heilkunde und ihre Widersacher," 1872, which was published in Volkmann's Sammlung, and "Die Homœopathie Hahnemanns und die der Neuzeit," by Carl Kœppe, 1881. The edition of the Organon to which I shall have occasion to refer is the fifth American, translated from the fifth German by C. Wesselhœft, M.D., in 1875, and published by F. E. Boericke in 1887. We are assured at the outset by the translator, in his preface, that "Hahnemann's Organon of the art of healing still continues to be the foundation which bears the new and growing school of medicine known as that of homœopathy."

The Organon is composed of an introduction, the work proper, which consists of 292 paragraphs, 151 explanatory notes and an appendix, endorsing mesmerism and teaching its proper application.

I shall attempt, as briefly as possible, to present to you the principles of homœopathy, and this I believe can best be done by answering two questions from the standpoint of Hahnemann: (1) What is the nature of disease, and (2) upon what theory must its cure be attempted?

What is the nature of disease? There is no difficulty in reaching Hahnemann's conception of the essential nature of disease. In his introduction we find stated in italics, "Diseases will not cease to be (spiritual) dynamic aberrations of our spirit-like life, manifested by sensations and actions." He is quite wrought up at the claims made by the pathologists of his day, who were asserting that material changes occurred in the body when affected by disease, for he completes the sentence quoted by saying, "That is, they will not cease, for the sake of those foolish and groundless hypotheses, to be immaterial modifications of our sensorial condition." In answer to those who claimed to cure diseases of the skin by local applications, to remove tumors, glandular swellings, fistulæ, necrosis and a host of other surgical affections by operative measures, he says: "But mark the result! Metastases is sure to appear sooner or later (but which are then pronounced as new diseases), and invariably more serious than the primary disorder, refute their assertions sufficiently, and could or should undeceive them by disclosing the deeper immaterial nature of the evil, as well as its dynamic (spirit-like) origin, to be combated only by dynamic processes."

In section 9 of the Organon we find this statement: "During the healthy condition of man this spirit-like force (autocracy) animating the material body rules supreme as dynamis," while section 11 reads: "In sickness this spirit-like, self-acting (automatic) vital force omnipresent in the organism is alone primarily deranged by the dynamic influence of some morbid agency inimical to life. Only this abnormally modified vital force can excite morbid sensations in the organism and determine the abnormal functional activity which we call disease. This force, itself invisible, becomes perceptible only through its effects upon the organism, makes known and has no other way of making known its morbid disturbance to the observer and physician than by the manifestation of morbid feelings and functions; that is, by symptoms of disease in the visible material organism."

Disease, then, from the Hahnemannian standpoint, is a spiritual manifestation, a disturbance of the spirit force which animates our body, and which is called dynamis. As this term permeates all homœopathic literature and is used in defining not only the nature of disease, but the character of the power exerted by drugs, its real definition is not to be misunderstood.

Hahnemann recognized no physical signs; he discountenanced physical examination. True, when he first wrote, at the close of the last century, Auenbrugger, Corvisart and Lænnec had

not revealed to the medical world the wealth of learning this branch of our art was to unfold; yet when he issued his fifth edition, in 1833, physical science had become the common property of the profession. Subjective symptoms were to Hahnemann the guiding stars of treatment. Hahnemann simply followed the other theorists of the earlier part of the eighteenth century, Stahl, Hoffmann and the many other so-called philosophers who reasoned by induction, and not physical observation. To all of them disease was but a disturbance of our dynamic, our soul life. Pathology had not yet laid bare the material nature of disease. Hahnemann argued as follows in support of his theory, as against the material nature of disease: "Washing the sexual organs, even if immediately and carefully done, never is a protection against infection by venereal chancre. A breath of air wafted over one afflicted with small-pox can call forth this horrid disease in a healthy child. Is it possible to admit the existence of material morbific matter and its transition into the blood in this and all such cases? A letter written in the sick-room and sent a great distance has often imparted to the recipient the same miasmatic disease. Can material morbific matter be thought of in this case as having permeated the humors of the body?" On the other hand he tells of dangerous bilious fever resulting from a mortifying altercation; of a superstitious prophecy of death coming true at a predicted time; of sudden news causing instantaneous death, and then concludes his summary with these words: "The defenders of an assumption so gross as that of morbific matters should blush to have so inconsiderately overlooked and misunderstood the spiritual nature of life, as well as the spiritual dynamic power of pathogenetic causes, thereby having degraded themselves to the level of medical scavengers who, instead of curing, destroy life by their endeavors to expel morbific matter from the diseased body, where it never existed."

I quote this sentence in full to illustrate the spirit in which the whole work is written. It contains any number of similar charges, assailing the profession on nearly every page with the severest accusations. In section 72, two classes of diseases are further defined, the acute, which "includes rapid morbid processes caused by abnormal states and derangements of the vital force," which run their course in a brief period, and the chronic, "which, in a manner peculiar to themselves, act deleteriously upon the living organism, dynamically deranging the latter," and are originated by "infection with a chronic miasm." In sections 78, 79 and 80 we are treated to a description of the miasms which are capable of destroying the equilibrium of our soul life in the specific way described. These are syphilis, sycosis, and lastly and most important of all, psora.

Syphilis, we are told, had been recognized as one of the chronic miasmatic diseases; but sycosis, and by that is meant "Feigwarzenkrankheit," or venereal warts, had not been previously so regarded, but we are assured that it possesses such properties. However, it is psora which is—and I quote literally from section 80—"the only real fundamental cause and source of all the other countless forms of disease figuring as peculiar and definite diseases in books on pathology under the names of nervous debility, hysteria, hypochondriasis, mania, melancholy, idiocy, madness, epilepsy and convulsions of all kinds, softening of the bones (rachitis), scotiosis and kyphosis, caries of the bone, cancer, varices, pseudoplasms, gout, hæmorrhoids, icterus and cyanosis, dropsy, amenorrhœa, hæmorrhages from the stomach, nose, lungs, bladder or uterus, asthma and suppuration of the lungs, impotency and sterility, sick headache (hemicrania), deafness, cataract and glaucoma, renal calculus, paralysis, deficiency of the special senses and pains of every variety."

Truly psora must be a thing to be feared. It is responsible for seven-eighths of all chronic diseases, and this category includes a variety of ills which makes one shudder to think of the afflictions that may be in store for him whom the psora miasm might strike.

There can be no question as to what Hahnemann understood by these miasms. We find many references to them in the Organon; section 204 will suffice. He says, after referring to them specifically: "Each of these must have pervaded the entire organism and penetrated all its parts before the primary representative local symptom peculiar to each miasm (itch eruption of psora, chancre and bubo of syphilis, and condyloid excrescences of sycosis) makes its appearance for the prevention of the inner disease."

But this will suffice as an answer to our first question.

Second, upon what theory must its cure be attempted? Diseases are called "natural," while every effort directed to their cure by the administration of medicines is said to create an "artificial" affection, a drug disease. It is argued, beginning with section 36, that similar and dissimilar diseases of varying intensity may coexist in the body. But to effect a cure we learn, in section 70, that of all methods of treatment directed to any disease, "the only really salutary treatment is that of the homœopathic method, according to which the totality of symptoms of a natural disease is combated by a medicine in commensurate dose capable of creating in the healthy body symptoms most similar to those of the natural disease; and as diseases are only dynamic disturbances of the vital force, they are overcome without additional suffering, and having been perfectly and permanently extinguished, they must cease to exist."

The manner in which the patient escapes from the conflict excited between the drug and the natural disease is further stated in section 29, which says, "by administering a medicinal potency chosen exactly in accordance with the similitude of symptoms, a somewhat stronger, similar, artificial morbid affection is implanted upon the vital power deranged by a natural disease; this artificial affection is substituted, as it were, for the weaker similar natural disease (morbid excitation) against which the instinctive vital force, now only excited to stronger effort by the drug affection, needs only to direct its increased energy; but owing to its brief duration it will soon be overcome by the vital force, which, liberated first from the natural disease, and finally from the substituted artificial (drug) affection, now again finds itself enabled to continue the life of the organism in health."

Next it remained to ascertain what drugs possessed this ability to create a so-called drug disease similar to the natural one. For this purpose Hahnemann adopted a plan suggested by Albrecht von Haller in 1771 of administering drugs to healthy individuals and noting the manifestations which supervened. This was called "proving a drug." Some fifty paragraphs are devoted to the directions to be followed in conducting these "provings." While in section 141 it is admitted that "the most desirable provings are those which the healthy unprejudiced physician has made upon himself," yet individuals of both sexes without regard to any medical qualifications were selected and permitted to record, of course with great exactness, any and every manifestation. "The physician should examine the report immediately after the termination of the experiment" we are told (section 139). Evidently not always the educated were selected as the testors, for it appears (section 140) that "if the prover is not skilled in writing, the physician should inquire every day concerning the nature of the symptoms."

The action of drugs was studied both as to their "primary effect," which was presumed to be an alteration of the "harmony of the vital forces" (section 63) and the later resulting conservative reaction described as an automatic activity of the vital force, and which is called the "after effect" or "counter effect." Of course only a single drug is to be administered, and it is truly remarkable that given in an attenuated dose how very long was found to be the period of its activity, and the multiplicity of symptoms it was said to produce.

Following a single minute dose of lycopodium, which is presumed to be inert and as such was and is dusted upon pills, there appeared a train of symptoms in number 1,608 of very remarkable character and continuing for a period of from forty to fifty days.

One decillionth of a grain of table salt awakened a frightful train of symptoms including headache, interference with sight and hearing, great gastric distress, nausea, vomiting, intestinal colic, a variety of menstrual irregularities, respiratory difficulties, dyspnœa, palpitation, and enough more to reach an aggregate of 1,349.

The various drugs we are told act not upon the material organism but producing their impression through the nervous system, they awaken the necessary dynamic changes. And, therefore, every part of the body endowed with sensitive nerves, is capable of receiving the influence of medicines and transmitting their power to other parts. Though the stomach, tongue and mouth are most susceptible to medicinal impressions, the lining membrane of the nose possesses this susceptibility to a high degree (section 289–90). So that in patients who are very excitable and weak, remedies may be administered by olfaction. Of the efficacy of this particular method of administering remedies, Hahnemann says, in note 149, he is convinced; being assured that the power of the medicine is at least of the same degree of intensity as when administered by the mouth; and should, therefore, be repeated at the same intervals. In that I rather think we can agree with him. But in whatever method administered the chosen remedy should be of such an attenuated strength, or rather weakness, that it should awaken the least possible reaction. And we are further assured in section 160 that the dose of no homœopathic remedy can be reduced to such a degree of minuteness as to make it powerless to overcome and to completely cure any analogous natural disease of recent origin and undisturbed by injudicious treatment.

The selection of the dose was in Hahnemann's mind a most important desideratum. He chose preferably the 30th dilution; in other words one decillionth of a grain of a crude drug or drop of a fresh vegetable juice.

Mathematicians have attempted to give us some conception of the degree of dilution thus attained. Munk puts it this way: A cubic foot of water contains 3,000,000 drops, a cubic mile 780,000 trillion drops, the earth contains 2,662 million cubic miles, and, therefore, has a capacity of 2,080 quinquillion drops. So that the 30th dilution, that is to say one decillion drops, has the capacity of a body of water equal to 480,769 worlds the size of our own. One drop of medicine in such a body of water, thoroughly shaken, yields wonderful results; one drop of a decillionth dilution of Indian currant berries produces hemiplegia, and one drop of a solution of table salt of the same strength will continue its effects, as above described, for fifty days.

Hahnemann himself must have been amazed at the results of his wonderful discovery, and as even he could not reason that these marvellous

properties were to be attributed to the material virtue of the drugs, he concluded that their effects must likewise be of that inexplicable dynamic character possessing to a rich extent the same spirit-like properties presumed to be the essential character of disease itself.

And so we find in sections 160, 269-270 this very plainly stated. Their specific virtues are imparted to the remedies by trituration or dilution. For example he writes: "Thus, two drops of the fresh vegetable juice mixed with an equal proportion of alcohol, are diluted with 98 drops of alcohol, and potentiated by two succussions of the hand, this is the first development of power (potency). The same process is then to be repeated with 29 successive vials, each vial to contain 99 drops of alcohol, filling three quarters of the vial; this second vial is then to be shaken twice, and so on to the 30th development of power; this is the potentiated decillionth old dilution, and the one to be commonly used." Now to quote again, "through this simple process, the powers hidden and dormant as it were in the crude drug are developed and called into activity in an incredible degree. In this way the medicinal powers, even of substances hitherto considered inert, are most effectually developed," and finally the clear explanation of all in section 269 reads: "to serve the purpose of homœopathy, the spirit-like medicinal powers of crude drugs are developed to an unparalleled degree."

Then in section 286 follows the equally remarkable explanation of the manner in which these dilutions impart their strength. "A homœopathic dose is augmented by increasing the quantity of fluid in which the medicine is dissolved, preparatory to its administration, while the actual quantity of medicinal substance remains the same. In using a solution of this kind, a much greater surface supplied with sensitive nerves, susceptible of medicinal influence, is brought in contact with the medicine." And finally in section 288 we are told in this liquid form, the medicine spreads through the organism with such inconceivable rapidity, that this effect may with propriety be defined as spirit-like, dynamic." And thus we have fully unfolded the theory of homœopathic practice as laid down by Hahnemann.

As to the claims made for it by Hahnemann we find stated in sections 24, 54 and 70 that the theories here presented are alone the true principles to guide in medical practice. It is not one out of many laws, but it is exclusively the law and that most emphatically.

It remains for us to see what has been the history of homœopathy since its early promulgation. It remained unchanged until the third decade of our century. Its success during the lifetime of Hahnemann was partially due to the period of its birth, which as has been seen was at a time when similar ideas of the nature of disease were quite prevalent, but particularly as his teaching was directed to the populace and satisfied their longings for something that possessed the air of being marvelous.

In 1822 homœopathic societies, journals and hospitals were established. The publication of his work on chronic diseases in 1828, in which he first promulgated his psora theory, led to a division in his own camp. This is readily understood when we find in this work the statement of the futility of his previous treatment of chronic diseases; admitting as he does, "that the beginning of the homœopathic treatment of these diseases was cheering, the continuance less favorable, but the termination has proven entirely hopeless."

Having lost faith in their leader, some went a step further, and so we find Hermann advocating instead of homœopathy isopathy. It was claimed that when certain organs were diseased it was necessary to give the invalid the corresponding organs of a healthy animal. Therefore fox liver was given for liver disease, fox lung for lung disease and fox brain for brain disease.

Soon we find Gross and Lux considering it necessary to give these organs in an extremely diluted dose, and finally the most repulsive absurdities grew into practice. Blood was given for blood diseases, the sputum of phthisis to consumptives, teeth to those whose own had become carious, and even worms to those afflicted with helminthiasis. Revolting as this may be, we will soon see that this practice has not entirely disappeared.

Recognizing the need of further reform in homœopathic therapeutics, Grüner and Honigsberger suggested larger doses. Kurz, Ott, Rapon and Barth introduced hydro therapeutics. Then came the advocates of gymnastics, mesmerism and animal magnetism. The mysticism surrounding homœopathy found in the latter a wonderful adjunct. But homœopathy received no support from these innovations, for while on the one hand, they exposed her shortcomings on the other, it was extremely doubtful, to say the least, whether their plan of action was based upon the "similar" doctrine.

But as with advancing years investigations in the field of rational scientific medicine developed pathology and physiology, it became apparent, that the ethereal dynamic conception of disease must be receded from by the homœopathic practitioners.

About 1850 Griessellich appeared in the van of homœopathy, and he was followed by Arnold and finally by Hirschel, who in 1854 published "A Sketch of Homœopathy from its new stand-point." The claim was then put forth that modern homœopathy is materially different from what Hahnemann taught, and that accepting and standing upon the great medical advances of the the day, it should be regarded as scientific. They

received the results of scientific investigation and substituted for mere symptomatic expression the pathological changes in the organs, as the essential feature of diseased processes.

Hahnemann's conception of disease was therewith abandoned but the law of similars was still maintained. And now we find asserted as the modern conception of homœopathy by W. Stens, Jr., Griessellich, W. Sorge and Gutwill: That there are certain classes of medicines which affect a number of organs and tissues, influencing their action; and that they are to be prescribed for the diseased organs which they are presumed to alter. But despite the wealth of their therapeutic armamentarium, no homœopath has yet shown that any drug was able to excite a pneumonia, an emphysema, a collection of water or pus in any cavity of the body, or that any liver, heart or kidney disease has ever been awakened in a previously healthy man by the administration of a homœopathic remedy.

It has been claimed for certain specific drugs that they do produce pathological conditions similar to those for which they are prescribed. Thus mercury has been known to awaken a diarrhœa, and, again, mercury and constitutional syphilis sometimes act alike. But what of the dose? Will any one pretend to say that the persistent or appreciable administration of a drug, perhaps in even poisonous doses, is to be followed by the same effects as when it is given in a millionth, or worse still, in a decillionth part? More than this, can it be said that the pathological changes in diarrhœa and those following mercurial poisoning are identical?

The recent efforts of homœopathy to reconcile the positive findings of the pathologist with their views have proven more futile than was the case in the early days of Hahnemann when speculation was, if not legitimate, yet the quite universal practice. As to the proving of their remedies upon healthy individuals, the methods pursued are to-day identically the same as those of old. Baer's work on digitalis, which, to quote a homœopathic writer, is to be regarded as "unquestionably the best and most scientific work" of its kind. In it, among other symptoms, he records a sharp nasal catarrh occurring ten days after taking the last dose; accompanied with a pain in the head and arms; and, as the last effects, dull pains in the chest and sharp fleeting pains in the head seventeen days after discontinuance of the drug. Clotar Miller, in a popular work on medicine from the homœopathic standpoint, describes in his chapter on diseases of the mouth, fifty remedies, the selection of which hinges upon the alteration of taste and in the coating of the tongue. His chapter on cough and toothache indicate that a remarkably fine acumen is necessary to discern their special character and the choice of the suitable remedy. Then follows a list of specifics for the cure of hernia, caries, tumors, including carcinoma, and like Hahnemann prescribes a different line of treatment for the psychical diseases as they are caused by fright or fear, hate, love or jealousy; or may be announced by a shriek, oaths or curses; or yet again find their expression in absent-mindedness, talkativeness, laughter or tears.

One of the most remarkable of recent literary productions is the address of Lutze, which was delivered at the Hahnemann memorial services in 1872, and which has reached its forty-second edition. It appears that a man æt. 72 was cured of persistent vomiting by giving him a glass of water which the writer had magnetized by holding it in his right hand. From which he concludes "that if pure water can be so enriched in medicinal virtue by simple contact with the hand as to cure a disease of years' duration, how much more must this power grow if a properly diluted drug, whose peculiar powers experience and provings have taught, be subjected to constant shaking in the hand, until it becomes enormously efficient." Further he says: "The poisonous properties are removed from a drug through its dilution, while its special peculiarities, so to speak its soul, remains and by rubbing and shaking becomes vivified and strengthened by human magnetism."

Stens, Jr., Grauvogl and Heinigke argue that the intensity of a drug affection is not dependent upon its quantity, but upon the extent of surface to which it is exposed, and hence is increased by its trituration.

Heinigke proposes the remarkable explanation that the atomization or molecular fission, as he sees fit to call it, is the essential thing which frees the given drug of the laws which govern it during the period of its affinity. And therefore he argues, and this in 1871 in his "Principles of Homœopathy," that drugs become specifics only after they attain free molecular form, while in the state of their chemical affinity they have only chemical effects.

Grauvogl (1870), returns to the old teaching of Hahnemann, for, asks he, "Has any chemist weighed the quantity of atmospheric air required to be inspired, necessary to produce cholerine, cholera or typhus, how much miasma until intermittent is produced? As it cannot be established that the severity of disease is dependent upon the quantity of *materies morbi* introduced, therefore it is much more absurd to maintain that the quantity of medicine administered is to regulate the effect desired to be secured."

These are quotations from recent homœopathic literature, and yet they tell us that modern homœopathy is quite a different article from that offered by Hahnemann. If this be so, I have failed to discern the difference.

Even isopathy has been regenerated. I have in my possession a "catalogue of morbific prod-

ucts, nosodes, and other remedies, in high potencies, by Samuel Swan, M.D., 1886," which any of you may obtain by writing for it to 13 West 38th St., New York City. It bears the famous insignia, "*similia similibus curantur*," and the mystic words, "simplex simile minimum." It is furthermore stated in italics: "Morbific matter will cure the disease which produced it, if given in a high potency, even to the person from whom it was obtained." It is at once the most remarkable and most revolting, the most incredible and infamous production, that has ever been launched upon a suffering community. It contains a list of about 1,000 pills, which includes a group which would readily awaken, perhaps, a cynical smile from the unbeliever. Such as pills containing alcohol, aqua pura, Buffalo lithia, electricitas, ether, ice, "tears of a young girl in great grief and suffering," magnet moonlight, and finally, those made "from a silk handkerchief eaten by a cow and taken from the stomach in a hard ball, during the three years she never had a calf."

All this might do very well and be regarded as a great joke, were it not for the far greater list of such revolting matter as: renal albumen, lice insect, renal calculus, kidney of Bright's, carbuncle pus, condylomata, diabetic sugar, diphtherine, otorrhœa syphilitica, body and head lice, pus from caries, rectal abscess, cancer of uterus, breast, pylorus and face, syphilinum, tinea syphilitica from a patient with tinea capitis, "menstrual blood from a woman with warts," vomit from a yellow fever patient, and so on.

Think of administering such vile excrementitious and pathological products under the name of medicine, under the cover of practicing the healing art, and if the thought is not revolting, if the possibilities to which these homœopathic notions, if followed to their legitimate conclusions, can bring us, is not appalling, then there is nothing frightful in nature.

Perhaps, however, no more truthful picture can be seen of homœopathy, both in what she pretends to be to-day and what in reality she is, than can be drawn from the report of the annual meeting of the New York Homœopathic County Society held on January 9, 1890.

The President, in his address, makes several assertions which history will hardly warrant. Amongst other statements he says: "Since all other means have failed to destroy homœopathy, its opponents have now raised the cry that it is sectarian. But this, like all past attempts to injure this school, is doomed to the same inevitable failure. For sectarianism in the beginning was forced upon homœopathy. If when the law of *similia* was first promulgated by Hahnemann, it had been accepted by the profession as one law of cure, even of little importance, it would have advanced the therapeutics of the old school many years, but would have prevented the formation of a sectarian school. Shall we then, at the dictum of the old school and the few discontents in our ranks, tear down the bridge which has carried us safely over? The time has not come for this. When the dominant school of medicine accepts the law of *similia* as one of the laws of cure; when the principles of homœopathy are taught with others in their colleges; when homœopathic physicians and surgeons are admitted upon an equal footing in their societies and given the same recognition in their hospitals and public institutions; when the ban which has been laid upon all followers of Hahnemann has been removed—then, and not until then, can we afford to give up our distinctive title. They who first forced us into sectarianism must give us a more cordial invitation to return to the fold before we can with honor accept."

In our review of the Organon and its principles to-night has there appeared a single claim to this position? Hahnemann himself was the one to proclaim that the doctrine of similars was an exclusive, a sectarian dogma. It was he who maintained that it alone was the correct principle of practice, and through its application only could cures be effected. He not only did not desire that it should be recognized as "one law of cure, even of little importance," but he insisted that it was the law of cure of all importance. He recognized no other plan of treatment, and the manner in which he assailed and abused those who decidedly opposed him, the titles of "renegade" and "mongrel" he applied to his followers who prescribed the tenth and not the thirtieth potency, indicate only too well how utterly untenable is the position of Dr. Norton. What claims has homœopathy to recognition by the "dominant school?" During the one hundred years that have passed since Hahnemann wrote his first dissertation upon homœopathy, not one single scientific fact, not one single medical or surgical truth has been added to our professional knowledge by the homœopathic practitioners.

Its struggle has been one for existence. It has pursued a defensive and not a progressive policy. Those who at heart are homœopathic practitioners must stand upon the same ground as did Hahnemann at the beginning of this century. As is apparent in the recent homœopathic works I have quoted, homœopathy to-day is in its fundamental thought the same obscure mysticism—the teaching of the immaterial nature of disease and its causes and the interpretation of the mystic and dynamic action of remedies.

If homœopathy in this sense does not exist, then most certainly it does not in any other. How true this latter sentence is, is answered by the further report of this same meeting of the New York Homœopathic Society.

Following the President's address was a paper by Dr. J. W. Dowling, Professor of Clinical Med-

icine and Diseases of the Heart and Lungs at the New York Homœopathic Medical College, on "La Grippe." He asserts that the germ theory furnishes the only plausible explanation of the origin of the disease. He draws the line between croupous and catarrhal pneumonia. He explains the increased death-rate of croupous pneumonia to be due not directly to the prevailing epidemic influence, but to the "specific organic poison" that develops croupous or lobar pneumonia and nothing else. The system may be run down by influenza, and brought so far below the ordinary level of health, that the germs of croupous pneumonia now become active and develop their peculiar disease. The same, he says, may be said of malarial illness, of typhoid fever or any infectious disease. The case, he argues, is different with catarrhal pneumonia, which he says is always preceded by a bronchitis, and owes its cause to an extension of the inflammation from the lining of the minute bronchial tubes, and so he goes on.

Truly this is the kind of homœopathy that Hahnemann did *not* teach. Then followed a discussion upon the treatment. The most diversified views were presented, and amongst them one practitioner advocated 20 gr. doses of baptisia, which another insisted was not homœopathic, while a third, *mirabile dictu*, admitted that he was using antipyrin in 10 gr. doses.

As a matter of fact Dr. Guernsey, one of the foremost of the so-called homœopathists in New York, is no doubt correct in saying, that there is to-day no exclusively homœopathic practitioner in New York City.

It is not my intention at this late hour to read a panegyric of the work performed during the life period of homœopathy, in the field of scientific medicine. Advancing from the eighteenth to the nineteenth century, she stepped as it were into a new life. Emancipating herself from the chains of speculation, there opened before her an era of real study and observation. No mere statement of symptoms, real or fancied, from the lips of some enthusiastic, imaginative, or yet even earnest physician or, worse still, some neurotic or illiterate patient. But there came a time of earnest, hard study. The French school led by their progressive Bichat, who made in a single winter 700 autopsies, and who, though forced to succumb to phthisis in his 31st year, had lived, in those few years, a life so useful that he impressed himself upon medical history for all time. Here was laid the foundation of real medicine. No longer could disease be presumed to be a myth. New methods of study were introduced. Percussion, announced to the profession by Auenbrugger, was given a permanent place by Corvisart, whose student Lænnec enriched the art of physical diagnosis by the discovery of auscultation. The French school was reinforced in their efforts by the one in Vienna, and Rokitansky and Skoda completed the establishment of realistic medicine. New methods of clinical study were introduced; urinary analysis was undertaken, the clinical thermometer told and foretold the course of febrile affections, and the most careful methods of diagnosis were made possible as the true nature of disease was unfolded. Physiology taught us the manner in which we live and gave a more material explanation of our existence than was presumed to be its cause, when "dynamis" ruled supreme. The germ theory of infectious diseases, first advanced in 1836 by Latour, found careful students and cleared away the mysticism enshrouding these affections, which were so inexplicable to Hahnemann, until now, with the light shed by the labors of Koch, we understand more thoroughly the means of their production. Chemistry, which during our century has grown to be a recognized science, has joined hands with microscopy, and to-day there can be isolated not only the pathogenic microörganisms but those infectious chemical poisons, the ptomaines. On every side scientific medicine has steadily progressed, and with each advancing step has dealt a death blow to the pretensions that disease is an immaterial, spiritual manifestation.

Facts and discoveries accumulated so rapidly that no single individual could master them all. Special fields of study were entered upon, and soon unheard of realms were being explored. Gynecology, ophthalmology, laryngology, dermatology and diseases of the nervous system, were all substantially unknown until the present century.

It is said that homœopathy has greatly advanced the study of the physiological action of drugs. The medical literature of the close of the last century teems with the productions of this sort. Koeppe in his *brochure* referred to presents a list of works, showing that before the era of Hahnemann studies of this character were by no means rare. But who will say that the records of the Hahnemannian kind, made in the most unscientific manner and through the most ignorant agencies, based upon presumptions which medical progress laughs to scorn, have been of any real service to physiological medicine? Look to the text-books. Does Brunton or Wood make the first suggestion of any fact homœopathy has ever adduced?

And what shall we say of surgery, that not only kept pace in its pathology, but which has taught us how to render the sufferer unconscious while severe operative procedures are undertaken; has, guided by unerring progress, with a certainty born of positive knowledge, dared to invade the most sacred cavities of the body and remove existing disease? Where can we read a more conclusive argument against the immaterial dynamic nature of disease, than in that chapter unfolded by Lister on antiseptic and aseptic surgery?

But I must close.

If in the medical history of this century, one fact stands out more prominently than does another, it is that the age of dogmas, of systems, of speculation, is passed, and that medical science, broad and progressive, cannot be compressed into the narrow confines of any creed.

And now we are told that the name "homœopathy" should be changed and that of the "new school" adopted.

For a school that was the exponent of a mystic, ethereal idea, whose absurdity has long ago been proven; for a school existing for a whole century, in the midst of tremendous advancement in every department of learning and science, which throughout its whole existence has not added a single truth, but which has decade after decade been made to realize the growth of scientific medicine and admit its own folly; for such a school to now claim the title of "new" is indeed presumptious. Which is the new school? the one that stands as the last representative of the mystic systems of the eighteenth century, or the one that is broad and progressive as knowledge itself?

Let history answer.

ORIGINAL ARTICLES.

CASUISTRY IN OBSTETRICS.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Casuistry is a word much less used now than formerly; but though the times change and we with them, the idea that the word expresses abides, and will continue as long as the race. Nay more, as the relations of human beings become more complex, and as the boundaries of science are extended, so the sphere of duty grows, and questions as to human conduct multiply, and often are more difficult of answer.

The word casuist was more especially applied to theologians occupied in resolving questions of conscience, and the famous order of Jesuits has probably stood most prominent some centuries in giving special study to casuistry. The disrepute into which the words have fallen has been attributed to Protestant revolt against alleged religious abuse of casuistry and of the office of casuist. It should, however, be remembered that before the Catholic church sought to give light to its suppliants in doubtful problems of duty, Cicero, as Voltaire has remarked, discussed in his *De Officiis*, some of the most difficult questions, and that long before him Zoroaster gave as one of the best guides in making human conduct correspond with the claims of conscience, this maxim: "In doubt as to whether an action is right or wrong, abstain."

Admirable as Zoroaster's rule is, it may fail of adaptation in many of life's emergencies, and its light go out, leaving us in the darkness. Not to resolve may be to resolve; we may be compelled to do one of several things, being unable to fold our arms and reject all, because we do not know which is best. This is true in obstetric practice quite as much as in any of the departments of medicine.

One of the most eminent of Scotch moralists and metaphysicians, Reid, wrote as follows: "There are some intricate cases in morals which admit of disputation; but these seldom occur in practice, and, when they do, the learned disputant has no great advantage, for the unlearned man who uses the best means in his power to know his duty, and acts according to his knowledge, is inculpable in the sight of God and man. He may err, but he is not guilty of immorality." Here the writer admits that questions of casuistry do occur, and he also claims that if one does wrong after faithfully seeking to find out what is right, he is blameless; a conclusion that does not correspond with the generally received axiom, "ignorance of the law excuseth no man."

Let no one imagine that casuistry seeks evasion of the law, the compliance with its letter while its spirit is violated; and that the dominion of right is set at naught by quirks and quibbles such as lawyers sometimes use to secure the escape of the guilty. Undoubtedly men and women have made it a cloak with which they have sought to hide the nakedness of crime, as for instance, a wife who excused her adultery on the ground that while she resigned her body to her lover, her lips with which she had made vows of fidelity to her husband, were not touched. But such or any perversion of casuistry cannot weaken its power, or destroy its necessity. That necessity, as De Quincey has said, can be deduced from the very origin and genesis of the word; it is from *casus*, a case, and is really the science of cases. "After morality has done its very utmost in clearing up the grounds upon which it rests its decisions—after it has multiplied its rules to any possible point of circumstantiality—there will always continue to arise cases without end, in the shifting combinations of human action, about which a question will remain whether they do or do not fall under any of the rules. And the best way for seeing this truth illustrated on a broad scale, the shortest and most decisive is—to point our attention to one striking fact—viz.: that all law, as it exists in every civilized land, is nothing but casuistry." The enactment of laws, their enforcement, and the trial of civil and criminal causes, furnish at once proofs and illustrations of casuistry. Science is perpetually propounding new questions in casuistry, or demanding new answers to old ones. And this is true in medi-

cine. Another truth is this: in medicine the elements of time and place are often concerned in the responses to casuistical questions.

Writers of systematic works upon moral philosophy have quite frequently presented questions in casuistry. Among those which Kant propounded but left unanswered, were two at least which belong to medicine. The first was, "If a man has been bitten by a mad dog, and recognizes the symptoms of hydrophobia, ought he not to destroy his life, lest when the disease is fully established, he may injure others?" The second question was this: "The propagation of the species being Nature's object in cohabitation, ought this to take place when the purpose is impossible, as in pregnancy?" The latter question, as well as the more important one which from time to time is so often made matter of professional discussion, "May sexual intercourse occur and nature's purpose be thwarted by either party?" belongs to the casuistry of obstetrics.

It certainly is discouraging to one who seeks a universal and immutable foundation for morals, and therefore immutable and universal laws for the government of human conduct, to find the same question differently decided in different ages and by different peoples. When the elder Cato was asked what he thought of usury, his reply was, "What do I think of murder!" But to-day the most enlightened people regard usury as just and right. Pascal's words were an exaggeration, but no one can deny their expressing partial truth: "In the just and the unjust we find hardly any thing which does not change its character in changing its climate. The degree of the elevation of the poles reverses the whole of jurisprudence. A meridian is decisive of the truth, and a few years of possession. Fundamental laws change. Right has its epochs. A pleasant justice which a river or mountain limits. Truth on this side the Pyrenees, error on the other." Obstetric art presents at least approximate illustrations of some of the points referred to by the great French philosopher. When gastro-elytrotomy was revived by Dr. Thomas, and at the outset gave promise of brilliant success, the wise veteran obstetrician, Fordyce Barker, publicly remarked that if the value of the operation were established the subject of obstetric ethics must be re-studied. Outside of the United States the operation is scarcely known in practice, and one of the greatest of European obstetricians, Winckel, has recently said that it has no future. Porro's operation belongs almost exclusively to Italy, as also symphysiotomy, though the recent declaration of Mr. Tait in favor of the former will give it a wider acceptance. The recent successes of that operation and of Cæsarean section open questions which our fathers believed were settled.

The treatment of ectopic gestation in its early period is one of the pressing questions of the hour. In this country faradism has the support of some of the most eminent in the profession, while abroad it meets with hardly any favor; on the other hand, there are in Europe some distinguished authorities who advocate and practice injection of morphia into the ovum, a treatment never employed in this country.

The progress of science offers new questions in casuistry to the obstetrician. In illustration, the ophthalmologist discovers albuminuric retinitis in a pregnant woman, and announces to the obstetrician that her continued pregnancy is at the peril of her vision, possibly of her life. What answer is the latter to make, what conduct pursue? This question will be considered in the course of the paper; its present introduction was only to illustrate, as was stated, the fact that progress in science inevitably originates new problems in practice.

Passing from these references to time and place, and the advance of science in their relation to casuistry, permit me now very briefly to consider some of the questions that may be presented the obstetrician as a casuist. Let us take first that propounded by Kant, as to cohabitation in pregnancy. I have more than once made earnest protest against this indulgence as injurious to the pregnant woman in many instances physically, as often repulsive or odious to her, and then and thus an injury to her moral nature; it is neither needed nor desired by her, and it has its origin, not in exalting love, but in degrading lust. Marital continence purchased by a wife's indifference, aversion, suffering, possibly peril to her own life, or that of her unborn offspring, is held by a mere rope of sand, and the first strong wave of passion may forever sweep it to ruin. It ought to be impressed upon man that woman when pregnant should surely be treated as well as animals in a similar condition are, and that continence for months, or even for years, is a possibility and no injury.

Means to prevent conception in married life are asked of the physician. Admitting his knowledge of such means, means that though intercourse takes place are certain to prevent its legitimate result, can he inform married men and women? Laws are frequently so made that much is conceded to human weakness, the standard of legal enactment not formed for perfect beings, but brought down to the level of the intellectual and moral development of its subjects. Even Divine law has stooped to the moral imperfection of man, for did not the great Teacher assert to the Jews that the conditions of divorce were lowered by Moses on account of the hardness of their hearts?

Moreover, let it be recognized that frequent childbearing is in some causing rapidly failing health and strength; that children come faster than the means to properly care for them is ac-

quired; that infants are born with feeble organization, or tainted with hereditary disease, and as time goes on they may prove to be defective in mental power, or of bad moral character, so that one involuntarily says, better they were dead than living, or better they had never been born.

Nevertheless, all the condescension of law acknowledged, and these conditions of fact admitted, and even though we may not believe that the back is always given strength for the burden it must bear, or the wind tempered to the shorn lamb, the physician takes a great responsibility who endeavors to thwart Nature's law—*lex*, *lex dura*, *sed lex*. If there are instances in which the physician ought to impart such knowledge, they must be exceedingly rare, and the nicest casuistry is necessary. The consequence of this knowledge, while it may protect woman from danger, and society from harm, does not exalt, but degrades, man; he has no restraint upon his passion, while his conscience, reason and will are thus weakened; continence, the sure way of avoiding conception, is no evil to his body, and exercised for his wife's health and happiness, ennobles him, exalting his spiritual being. This may be the voice of one crying in the wilderness, but ultimately it will be heard and heeded.

The knowledge given in those cases in which it may seem to be necessary, will not be kept secret by the parties informed, but will be imparted to others who have no just excuse for avoidance of childbearing. It will become general, and thus a strong defence to female virtue is taken away, and the purity of countless lives and the peace of countless homes be sacrificed upon the altar of man's unhallowed lust.

I have no right to put into the hands of another a loaded pistol when there is a probability he will use it for suicide or homicide. We are morally responsible for imparting knowledge when we know it will be used for evil. The recognition of this law by Galen was commended by the illustrious Sir Thomas Browne, in his Pseudoxica Epidemica: "We commend the wisdom and goodness of Galen, who would not leave unto the world too subtle a theory of poisons; unarming thereby the malice of venomous spirits, whose ignorance must be contented with sublimate and arsenic."

The profession generally recognize the law that when pregnancy seriously imperils a woman's life, abortion is justifiable. But suppose the peril be not to life, only the integrity of an important organ is threatened; may the physician end the pregnancy? My friend and colleague, Dr. Wm. Thompson, informs me of his having been consulted some years ago in the case of a pregnant woman because of impaired vision. Upon examination he found albuminuric retinitis, and informed the family physician that longer continuance of the pregnancy would cause permanent injury. The pregnancy went to term, the mother becoming hopelessly blind. It is generally conceded by both ophthalmologists and obstetricians, that such condition of the eyes in a pregnant woman demands the induction of premature labor. Let us remember, however, that premature labor is a sort of compromise, for the infant mortality is very great; in one-third to one-half the cases we, by it, only succeed in preserving the child's life for a few days or a few weeks.[1] Bearing this fact in mind, are there not cases of albuminuric retinitis in pregnant women which justify, not merely consent but desire being expressed by the sufferer and her friends, the physician in ending the pregnancy even by procuring abortion?

Craniotomy upon the living fœtus has been for years the subject of much professional controversy. One of the most recent utterances upon the subject is by Mr. Tait, who after three successful cases of amputation of the pregnant uterus—the so-called Porro operation—having previously had four fatal cases of Cæsarean operation, one of them having been done seven years ago according to the method now claimed by Sänger as a new operation. The great Birmingham surgeon predicts that this amputation "will revolutionize the obstetric art, and in two years we shall hear no more of craniotomy and evisceration, for the new method will save more lives than these proceedings do, and it is far easier of performance." In a footnote he admits craniotomy for hydrocephalus. Destruction of the life of the fœtus may be necessary in other pathological conditions besides hydrocephalus; thus there may be ascites presenting delivery, or the child may be a monster.

Beside these cases, the practitioner may be called to one of neglected shoulder presentation, and the forerunners of uterine rupture are at hand; or to a case of face presentation, posterior rotation of the chin having occurred, and delivery impossible through the natural passage without the head is lessened. Uterine rupture may be threatened in simple pelvic narrowing, or from unusual size of the head, or from too advanced ossification of the cranial bones. Now the general rule of treatment accepted by obstetricians, is that in case there is imminent danger of rupture of the uterus, embryotomy is to be done at once. Some time since I was sent for to perform craniotomy, the mother having previously given birth to three or four living children, though the labors were long and difficult in consequence of some contraction of the pelvic inlet. But the child was living, the condition of the uterus normal, and the woman's strength good, and I declined to do the operation then, though the family were quite willing, rejecting the suggestion of a graver

[1] It is, however, highly probable, if not absolutely certain, that when the *couveuse* and *gavage* are more generally used in the case of feeble, prematurely born infants, mortality will much decrease.

one, and left the patient with the gentlemen in attendance, one of them an obstetrician of skill and large experience. Eight hours afterwards I was sent for again, and found a woman dying from ruptured uterus; the physician recognizing the injury, had endeavored to deliver by podalic version, but the head could not be brought through the superior strait until craniotomy was done. Could that result have been foreseen, there was a time when the lessening of the fœtal skull, supposing the woman and her friends to have refused abdominal section, would have saved her life and been justifiable.

Here I wish briefly to refer to a rarely occurring condition which involves one of the most painful, serious and difficult questions in casuistry. Three facts in illustration will be given. Thirty-nine years ago, when first coming to Philadelphia to attend medical lectures, my preceptor took me to the residence of one of the professors in the medical department of the university, a former fellow student of his. In the conversation that ensued between the two gentlemen this medical teacher narrated an obstetric case that he had just attended. The patient was the wife of his coachman, and had a deformed pelvis. The honored Professor of Obstetrics in the university, the late Dr. Hodge, was called, and, after performing craniotomy, delivered the child; but upon being born it cried vigorously, and the narrator said that he instantly took the crotchet and thrust it through the opening in the head into the medulla. A very eminent American obstetrician was called to a case of labor in which delay arising from rigidity of the os, the gentlemen in attendance had done craniotomy. By the advice of the consultant the woman was given morphia, and after a few hours' rest labor pains were efficient and the os readily yielded. Before the birth of the child, however, recognizing that it had survived the mutilating operation, he destroyed its life, those by whom he had been called in consultation consenting. I myself once performed craniotomy in a case in which I was assured by the physicians who had been in attendance several hours that the child was dead. The os was perfectly dilated, the presentation normal, but the head did not engage and uterine action almost ceased, the patient showing symptoms of exhaustion. Some minutes after the child was delivered it made a slight movement and emitted a faint sound. I took it into an adjoining room—no repetition of sound or movement; but that there might be no doubt I repeated what one of my honored teachers, long since in his grave, said he had done. I could think, in the emergency, of no other guidance. Let me repeat that this is one of the most painful, serious and difficult questions in the casuistry of obstetrics.

Those who justify craniotomy upon the living fœtus do not all agree as to the pelvic narrowing which forbids it, and renders abdominal section imperative. For example, a very distinguished British[2] obstetrician in a recent contribution to the subject states in one place that the conjugate must be two inches at least, possibly two inches and a quarter, to justify craniotomy, but elsewhere he distinctly states that he "would not hestitate to perform Cæsarean section upon a patient with a conjugate of two inches and a half, and of course under, feeling that her chance of survival would be just as good as after a difficult cephalotripsy." My own conviction is that the opinion expressed is right; only an expert in operating and with all facilities for operating, and when the operation is timely so far as the strength of the patient is concerned, is likely to save the mother's life when the conjugate descends to two inches, or near it. Thefore in the mother's interest abdominal section is indicated in such narrowing.

One portion of Dr. Phillip's interesting paper considers the degree of pelvic narrowing which is to be met by the induction of premature labor, and his conclusion is that this is indicated if the conjugate is two inches and three quarters to three inches. Thus it will be seen that comparing the less figure with the greater that he gives for the Cæsarean operation, two inches and three quarters with two and a half, this restricts craniotomy to one quarter of an inch—a limitation that is so near a victory in this field for those who condemn craniotomy upon the living fœtus, that final success seems almost attained. In the course of the paper referred to, the author presents a question in casuistry which is remarkable not in itself, but in the ambiguous answer given. Let there be two women, each having such pelvic deformity that a living child cannot be born, but delivery can be safely effected by craniotomy: one of them is poor, and cannot take suitable care of a child, and therefore does not desire one, while the other is in comfortable circumstances, and desires to have a living child. "The question then arises: Ought an obstetrician to be in any way guided by these maternal desires? A direct answer is necessarily difficult, and would vary in different cases. My own opinion is that provided they be consistent with the practitioner's course of procedure, they should not be passed over." One is reminded of the answer made by the Delphic oracle: "If Crœsus should make war upon the Persians, he will destroy a mighty empire." Encouraged by this reply he made war upon the Persians, and a mighty empire was destroyed, but it was the empire of Crœsus, not of Cyrus. If consistent with the practitioner's course of procedure these desires should not be passed over! One practitioner will perform craniotomy in both cases, and another abdominal section; the

[2] Dr. Phillips, British Medical Journal, June 1, 1889.

one procedure will respect the desires of one patient and the other those of the other patient.

Three recent successful Cæsarean operations in Philadelphia, one by Dr. Goodell, the second by Dr. Kelly, and the third by Dr. Anna Broomall, give promise that the future American statistics for this operation will be much more favorable than they have been. But just as in the past years one occasionally heard of a woman escaping ovariotomy by giving birth to a child, in defiance of the diagnosis, so now there will be instances of women who in their perversity disappoint Cæsareans by the same natural process. Yet errors of diagnosis and proposed treatment put aside, there can be no question that craniotomy is steadily having its field more and more restricted; nevertheless that it will entirely disappear unless for hydrocephalus, and that according to Mr. Tait's prediction in two years, few are sanguine enough to believe.

What ought we to tell a patient when election must be made between craniotomy and a Cæsarean section? Answering from Leopold's statistics, 8.6 per cent. perish, whereas only 2.8 per cent., or a little more than one fourth as many die after craniotomy. Theoretically all the children are saved by the Cæsarean operation, but Leopold's statistics show that 13 per cent. are lost. These are the facts from which her conclusion may be drawn, not urged, but only advised by the obstetrician as to which he believes the better. It is probable the majority of women will select that which is least perilous to their lives.

It is probable that amputation of the pregnant uterus is destined to occupy a more prominent place than it yet has, and it may be a large experience, and that of many, will confirm the position which Mr. Tait has assigned it. The simple method of performing it advised by him, will certainly commend it to all practitioners. He declares it "the easiest operation in abdominal surgery, and every country practitioner ought to be able and always ready to perform it. No special instruments are required—nothing but a knife, a piece of rubber drainage tube, two or three knitting needles, and a little perchloride of iron."

The future will soon answer the question as to whether hysterectomy or hysterotomy will save the larger number of patients, and have a mortality more nearly that of craniotomy; by that answer the obstetrician will have clearer guidance than he now has in one of the most important questions belonging to the casuistry of obstetrics.

Intubation in Italy.—The first intubation of the larynx for croup in Italy was recently performed by Dr. Egidi, of Naples, who still holds that tracheotomy is usually the preferable operation.

POLIOMYELITIS ANTERIOR ACUTA.

Read in the Section of the Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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When I received a letter from your President inviting me to write a paper for this Section I was at a loss for a subject to write upon. A short time after, while sitting in my office, a little boy came limping into the room; his atrophied leg with marked talipes valgus at once attracted my notice and suggested a subject. Although a difficult one to write upon on account of my limited experience with the disease, five cases only having fallen under my personal observation, it has been an exceedingly interesting as well as a painful one, and if I can say anything that will call forth a discussion that will throw more light on the nature and treatment of this malady I shall feel myself doubly repaid. I refer to poliomyelitis anterior acuta or infantile paralysis as it is commonly called. I shall confine myself to a consideration of the disease as found in early life, recognizing at the same time that the disease is encountered up to sixty years of age.

Poliomyelitis anterior acuta, as the name implies, is an acute inflammatory affection of the anterior cornua of the gray matter of the cord, the ganglion cells probably being the starting point. As yet there is very little known concerning the etiology proper other than it is to be found during the first three years of life. Various causes have been assigned such as cold, dentition, summer heat, acute febrile affections, the exanthemata, traumatism and a specific agent as yet an unknown member of the pathogenic bacteria.

Cold, as well as dentition and summer heat must be assigned as doubtful causes. Cold certainly can no more act as a causal agent than it does in rheumatism and pneumonia. A causative relation is supposed to exist between the affection and the exanthemata owing to its frequent occurrence during convalescence from them.

Loomis classifies traumatisms with the doubtful causes, but Jacobi says they have a more decided influence than is generally assigned to them. As to a specific microbe being the cause, nothing definite is known but the theory, to me, seems plausible. That a specific germ may gain entrance to and affect the motor regions of the cord is not impossible. Hydrophobia and tetanus are examples of the predilection exhibited for the motor regions by some specific infecting agent.

That the influence of heredity cannot be traced is an important negative fact.

Important changes are found by the aid of the microscope in the anterior horns of gray matter in the cervical and dorso-lumbar enlargements, consisting of an inflammatory softening. In the early stage all the changes of acute interstitial inflammation will be seen.

Later new connective tissue is developed and a sclerotic process is established, the multipolar ganglion cells have wasted and many have disappeared while those remaining are in various stages of degeneration, some have lost their processes and remain as irregular spherical masses of pigment. Whether poliomyelitis anterior acuta is an interstitial or a parenchymatous inflammation, the most careful microscopical examination fails to decide. The majority favor the view that the starting point is in the ganglion cells. Hyperplasia of the neuroglia in the anterior columns results in more or less atrophy of the nerve fibres. The anterior nerve roots are thin, atrophied and translucent and more or less degeneration takes place in the filaments of the peripheral nerves. The muscles which are implicated undergo serious alterations which consist in fibroid changes and atrophy; sometimes they undergo fatty degeneration. The bones of the paralyzed members are retarded in development and the tendons become atrophied. Important changes occur in the joints; the ligaments are relaxed, the articular surfaces atrophied and the articulations relaxed by reason of which great deformities are produced.

The usual onset of the disease is a fever which lasts two or three days or even more, but it may begin abruptly; the child goes to bed in the evening perfectly well, sleeps quietly through the night and awakens in the morning paralyzed. The fever may be accompanied with headache, backache, pain in the extremities, vertigo and even convulsions; or there may be merely nausea and vomiting. The paralysis is almost always at its maximum when first discovered. Most frequently the muscles of one or both lower extremities are affected; according to Duchenne, the right more frequently than the left, in the proportion of twenty-five to seven. Other observers have noticed it more frequently of the left. Four out of my five cases were of the right lower extremity. Sensibility is not affected.

The bladder may participate in the paralysis, and the urine be retained, as in my first case, or there may be incontinence; but the bladder is not permanently affected. Smith says: "The bladder and lower bowels remain unaffected, since only the muscles of volition are involved;" but as will be noticed in the history of my first case, the bladder is sometimes affected.

The tendon and other reflexes of the paralyzed parts are lost and the electro-contractility to the Faradic current is abolished. The temperature of the affected parts falls below normal, the parts being cold to the touch.

The number of muscles paralyzed varies in different cases. Only a single muscle or group of muscles may be affected, again both extensor and flexor muscles of one or more limbs may be affected. The single muscle most frequently affected is the extensor longus digitorum, and the group most frequently affected is the extensors of the toes and the flexors of the foot.

The following is a typical case:

Case 1.—Aubrey D., aged two years and ten months. Previous to present sickness, which occurred in September, 1882, he was in perfect health, had never had any serious sickness, nor any recent injuries. His mother noticed that the child was not as playful as common, that he did not amuse himself, that he was inclined to sit, rather than run about playing with the other children. Upon urging the little fellow to go and play he replied that he could hardly walk.

My attention was then called to the child and upon examination I found his temperature 101°; no other symptoms presented themselves, and thinking that possibly it might be malaria, I gave the child some quinine.

The next day the child was no better, temperature 100° in the morning and 101° in the evening. He complained considerably of pain in his limbs when required to walk, which led me to think of rheumatism. Quinine was continued. Third day: child no better, temperature about the same as the day before, pains in the lower limbs increased especially in the region of the right hip. Not another symptom presented itself that I could perceive and I was at a loss for a diagnosis.

I saw the child at 9 P.M. and nothing further had developed. He slept well during the night, and next morning I saw the child early and lifted him from his bed myself, whereupon he cried loudly with pain in the right hip. I began a careful examination, and upon taking hold of the right foot I found it cold and limp. The diagnosis was clear and I found myself confronted by a disease which I felt that I could not do as much for as I would have liked.

The child could not move a muscle below the hip, and the entire limb was cold. There was retention of the urine, but this yielded to warm hip baths. The pain in the region of the hip gradually disappeared in three or four days. The child was kept at rest in the recumbent position; the hot douche to the spine, with artificial heat to the paralyzed limb constituted the treatment for the first week, after which he was given iron as a tonic with strychnine according to the formula of Prof. Hammond.

℞.—Strych. sulph gr. j.
Ferri pyrophos. ℥ ss.
Acidi phos. dil.. ℥ ss.
Syr. zingib. ℥ iijss.
M. S. twenty minims three times daily.

Friction to the paralyzed member, together with electricity was perseveringly employed; but unfortunately, through the advice of a distinguished medical gentleman, the induced current only was applied.

The flexors and extensors of the leg soon regained their power of motion and in about four weeks the patient was able to crawl about the room. The extensor proprius pollicis was the first muscle of the leg to regain partially the power of motion. Other muscles in turn gradually regained some power of motion, and in two months the little fellow began to try to walk.

The muscles of the leg and foot had become markedly atrophied, and to-day the ligaments of the knee and ankle are relaxed permitting hyper-extension of the leg and considerable talipes valgus. The temperature of the limb still remains below the normal.

I will not trouble you with lengthy histories of my other cases; suffice it to say, that in

Case 2 the paralysis was noticed in the morning when the child, a boy of two years, was taken from his bed, having been apparently well when put to bed the evening before. The right lower extremity was paralyzed, and marked atrophy of the entire limb remains. The child walks fairly well. No deformity other than the atrophy.

Case 3.—A female, aged 18 months, was taken from the county infirmary by a lady who, thinking the trouble could be easily relieved, brought her to me. Here again the paralysis was of the right lower extremity, but only the flexors of the foot, and extensors of the toes were paralyzed. The onset is not known.

Case 4.—A female, aged 7 months when afflicted. Was brought to me for treatment some months after. The parents stated that the child had been sick, had had fever, and upon the recovery from the fever remained helpless. In this case both upper and lower extremities were paralyzed. Treatment was of no avail, and marked contractures with great deformities developed later on.

Case 5.—A female aged 2 years 6 months. After an attack of fever which lasted several days the parents noticed that their child could not use her right leg. My attention was called to the case, and I found paralysis of both flexor and extensor muscles of the foot and toes. Electricity with iron and strychnine constituted the chief treatment with a not very flattering result. The child is now able to run about but considerable atrophy and talipes varus remain.

The diagnosis ought to be, and doubtless with all of you is easy; but my observation is that many general practitioners are unable to differentiate it from other affections; for during my connection with my first case, a number of physicians saw the case with me and their diagnosis varied from worms and biliousness to rheumatism. I fancy I hear some one say, surely those physicians were very ignorant. Not so, for one of them was, and is to-day a professor in a medical college in good standing. If such men overlook the disease it may be well for us to notice some of the more important diagnostic points. In the first place it might be mistaken for paralysis of a temporary nature; here there will be no softening nor atrophy. There will be no change in electro-muscular contractility, and recovery may be expected in twenty to thirty days. Again it may be mistaken for rachitis, but here again there is no change in the electro-muscular contractility and there co-exists certain changes that cannot fail to determine the nature of the disease. In hemiplegia there will be loss of intelligence and speech, paralysis of one side of the face, strabismus, and generally dilated pupils, electrical contractility normal, absence of fever and muscular atrophy. In myelitis sensibility as well as motility is affected; genito-urinary complications and trophic disturbances such as acute bed sores, œdema of the paralyzed limbs and effusions into the joints are sufficient to differentiate it. Progressive muscular atrophy may usually be known by the age, the slowness of development, and in turn the affection of isolated groups of the muscles. Diphtheritic paralysis may be known by the previous history, by the paralysis of the soft palate, absence of atrophy, and preservation of Faradic reaction.

During the initial stage, before paralysis has occurred the treatment must be purely symptomatic, since a diagnosis is impossible. After paralysis has occurred, and the diagnosis is clear, the most important element in the treatment is rest in a recumbent position. In this I believe all authors agree, but in the further treatment there does not seem to be the harmony of opinion that might be desired. To prevent further destruction of the gray matter, Bartholow recommends quinia and belladonna; hot douche to the spine; the application of galvanism, inverse current, stabile, large volume and low intensity, together with rest. Althaus recommends hypodermatic injections of ergotin repeated once or twice daily. Hammond says ergot is the only medicine capable of cutting short the disease or limiting its lesions. Brown-Séquard praises the belladonna treatment. Loomis, in his third edition speaking of the treatment with ergot and belladonna says he has never obtained any positive results from their use. Simon advises cutaneous revulsives. Loomis says they are contra-indicated. Erb recommends central galvanization as an antiphlogistic remedy for the myelitis and places a large anode over the spine at the supposed seat of the lesion and the cathode over the abdomen. His method is intended as a sedative to the local inflammation. Loomis again says electricity is contra-indicated.

Allen Starr, in an article on "Electricity as a Therapeutic Agent," in the *Medical News*, March 30th, 1889, in speaking of the use of electricity in infantile paralysis says: "There may be an object in reducing congestion; but it is not cer-

tain that this can be accomplished for any length of time by electricity. After the acute stage is over, spontaneous recovery will occur in a greater or less degree in many cases. Is this aided by the application of electricity to the spinal cord? I have yet to be convinced that it is, though I admit that I still employ the agent in deference to the opinion of certain authorities." Further on he says "Experience does not confirm the statements of some text-books, and of those whose interests lie in the direction of its use."

Gowers says, "Electricity has been strongly advocated and largely used in the treatment of infantile paralysis, and there is reason to believe that it is useful, although its influence has been much exaggerated. In no sense is it a curative agent, and there is no evidence that its application to the spine is capable of increasing the degree or accelerating the course of the recovery of the nerve elements. Nor is it easy to obtain evidence of its influence over the muscles. If the wasting is rapid, this progresses in spite of daily and sedulous applications."

My experience with the agent corresponds with Erb, who remarks that "Its results are not precisely brilliant." Since the electro contractility to the Faradic current is abolished, it is useless to apply it, except to those muscles which are imperfectly paralyzed and the interrupted galvanic current should be used until the contractility returns sufficiently to react to the Faradic current when that should be used. But little benefit can be expected if the muscles have entirely lost their contractility. The utility of the Faradic current is a stimulus to muscles imperfectly paralyzed, but liable to degenerate from inaction and to take the place of the galvanic current when the contractility returns.

A valuable aid to electricity is strychnia, especially when given hypodermatically. It should not be thus given more than two or three times a week. In nearly every case tonics are indicated, such as iron, quinine, arsenic and phosphorus, and the formula of Hammond as given in the history of my first case is an excellent one.

Dr. King, of Chicago, had observed three cases in adults during the last winter. In adults it was possible to elicit symptoms that could not be learned from children. Pain is a very prominent feature in adults; not so marked in children. Temporary paralysis of the bladder is always present but it quickly passes off, showing that the fibres to the detrusor muscles are not in the anterior horns but are affected by collateral hyperæmia. Tactile sensation was unaltered. Electricity is keenly felt by children and on this account this agent cannot be thoroughly used in the treatment.

Dr. Peter Hooper, of Philadelphia, said that in his experience electricity was useless. Hypodermic injections of strychnine and massage were best.

A CASE OF DRAINAGE OF PULMONARY CAVITY, WITH A RIB-CUTTER DEVISED FOR THE OPERATION.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY C. DENISON, M.D.,
OF DENVER, COL.

November 5, 1888, A. C. L., age 26, teacher, single, Cheshire, Conn., and Tilton, N. H.; father died of consumption at the age of 70, and the disease was prevalent on father's side.

The patient had left side pneumonia last April and was five weeks in bed. The attack commenced with a chill and the crisis came in six days. There was rusty sputum and probably some pleurisy complicating the pneumonia. According to the attending physician, Dr. W. C. Williams, of Cheshire, Conn., resolution was slow and the lung did not clear up well. There were no hæmorrhages, but he lost flesh and had night-sweats at times during the summer, and after his arrival in Colorado, which was five weeks ago, felt elevation by increased dyspnœa. Has had chills, afternoon hectic, and now expectorates profusely a yellowish-white sputum, he thinks one-half pint a day. He believes he has improved here, especially in appetite and digestion. Usual weight, 150; on arrival in Colorado, 125; height, 6 feet; spirometrical record now 120 cubic inches; pulse, 108; respiration, 28; temperature, 3 P.M., 100° F.; expansion, 31 and 32½ inches; emaciation considerable; depression is marked, and there is almost no movement on left side. Some air enters the left scapular and interscapular regions, but otherwise dulness predominates on that side. Slight "cracked metal" sound on stethoscopic percussion in the lower and posterior part of the axillary space. On the right side there is some broncho-vesicular breathing in the inframammary region.

Diagnosis: Pneumonic phthisis, third stage left, first (?) right. Gave treatment for night sweats and put the patient on Gardner's syrup hydroiodic acid and syr. hypophosphites comp. N. F.

Reëxamination January 14, 1889. Been in Denver, out on Humboldt street, in the outskirts of the city. Been constantly expectorating mornings; has gained in weight, now 138 lbs.; sleeps well and appetite good, but not so well for the last two weeks; bowels at times loose; coughs during the daytime, and has afternoon chills and hectic; pulse, 110; respiration, 40; temperature, 101⅓°, 2 P.M., and expansion 31 and 32⅓ inches; left lung sinking in size; moist crackles left infrascapular, absence of respiratory murmur left lower axillary space; cavernous breathing apparently superficial left infrascapular, with "cracked metal" sound, showing excavation near the sur-

face. Advised permanent opening and prescribed creosote and use of Cutler's carbolate of iodine inhaler.

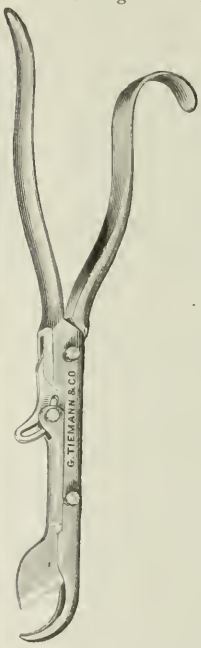
January 22.—Symptoms of progressive softening continue. His people have consented to the proposed operation. Resected the sixth and seventh ribs; entered the cavity, which discharged about four ounces of pus. Introduced a rubber tube, which was 4½ inches long, after trying a shorter one, which was inefficient. Through this tube half an ounce or more of a 5 per cent. solution of salol in liquid vaseline was injected twice a day. In less than two weeks the patient, who had lately ceased to cough and raise, was able to attend to himself, in cleansing the cavity antiseptically and injecting the salol solution, which had been increased to a 10 per cent. solution.

March 16.—Pulse, 92; respiration, 28; temperature, 4 P.M., 98⅔° F.; weight, 138½, which after the operation was only 125 lbs.; spirometrical record, 118 cubic inches; looks much better; expansion, 31½ and 33 inches, almost wholly on right; measurement of left, 15, right, 17 inches; right side much improved. The cavity is apparently the size of half an orange and surrounded with a fibrous deposit. Cut one inch from inner end of the tube. Appetite good; bowels regular; has no fever and sleeps well; does not cough, and expectoration has ceased since the operation; washes out the cavity once a day and injects the salol and vaseline; the discharge continually decreasing, and he has had no back-set.

April 20.—No fever; air evidently enters the lung back of the cavity, as there is a faint respiratory murmur over the posterior and upper part of the left lower lobe and underneath the left scapula. Apparent size of the excavation is 3x1½ inches, reaching from the inner part of the left infraclavicular region downwards and outward toward the left nipple, lying underneath the anterior wall of the chest, though detected through the posterior wall. Discharge about one ounce each twenty-four hours.

Reëxamination, Denver, May 10.—Been in Denver, and doing very well. Is going to Salida, Col., to take a clerkship in a hotel for the summer, and is now to have a new tube inserted. Weight, 140; gain, 15 lbs.; appetite, sleep and digestion in good condition; no discomfort from the tube in left side; injects the 10 per cent. solution of salol once a day; the discharge is mucopurulent and inodorous, between one-half and one ounce in each twenty-four hours; pulse, 76; respiration, 24; temperature, 10 A.M., 98⅓° F. The tube removed was 3½ inches long, and the new one 3⅓ inches, and the distance from the axilla to the inner side of the cavity, measured through the tube, is 4 inches or over. The cavity reaches from the clavicle above, along the side of the sternum downward and outward to the third interspace lying along the front of the chest, an average of 1¼x3½ inches in size. The tube lies in the bottom of the cavity, and the air enters the lung around the same toward the outer part of the left infraclavicular, and the whole of the scapular region and around behind toward the axillary region. Apex beat is within and 1 inch below left nipple. Expansion, 31½ and 33¼ inches; no râles. His looks are in harmony with his great improvement.

May 25.—Writes from Salida that the altitude (over 7,000 feet) does not trouble him, and the discharge has decreased one-fourth. He says: "The cool, clear air makes me feel vigorous and strong, and from present indications I think I shall be all right during the summer."



The Rib Cutter.—In this operation of resection the advantage was apparent of having a bone-forceps which could be operated through a small external opening, and without having to use force to thrust in the blades to grasp the rib.

The contraction of the chest wall made the ribs overlap each other, in which position they were so firmly fixed that they were with difficulty grasped with the ordinary cutters. Besides, I consider it of much importance to separate the periosteum and remove the resected portions of bone before opening into the thoracic cavity.

Determining to have these requisites to success supplied, I devised the accompanying rib-cutter, which was first made by a young mechanic, H. Rauchfuss, of Denver, and afterward perfected like the accompanying cut by Tiemann & Co., New York.

It combines a bone-forceps with a periosteum separator, and by the toggle-joint, which crowds the knife down upon the latter, gives the operator power enough to make a clean square section of the rib without wrenching or injuring the adjacent parts. When one section is made the periosteum separator, turned a little so its edge will bear against the inner surface of the rib, can be crowded along the bone so as to free it from all attachment, and the second section made as desired; or this freeing process may be accomplished before any section whatever of the rib is made.

Then one or more other ribs may be treated in the same way if desired, the external wound (or wounds, if more than one external opening is made to resect several ribs) may be cleaned, and bleeding controlled. The cavity may then be entered at a selected point by thrusting a blunt-pointed instrument through the pleura and the lung periphery, the opening enlarged with the finger and the drainage tube inserted. In the case above cited the two pleural surfaces were supposed to be adherent, or the pulmonary connected with the pleural cavity. The external opening of the tube immediately after its insertion was stopped by absorbent cotton and vaseline, and only oozing allowed when expiration or a cough took place.[1]

The treatment which I commenced on the next day—injections with salol and liquid vaseline—was original so far as I know. Yet I have every reason to believe that my hopes for the method have been realized, as shown in this case, namely, that the antiseptic in this form would be unirritating; that some of it would remain in the pulmonary cavity; that the wound would be kept sweet and the healing promoted.

In another case operated on May 23d a resected portion of a rib 1¼ inches long was removed through an external opening of the same length.

GLAUCOMA FULMINANS, AFTER EXTRACTION OF CATARACT WITH IRIDECTOMY.

Read in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY PETER D. KEYSER, M.D.,

PROFESSOR OF OPHTHALMOLOGY, MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

It is a well known fact that iridectomy is the sovereign remedy for glaucoma, and a few cases have been reported (I have had such cases myself), in which there has been a return of the symptoms necessitating a second iridectomy. But never have I seen or heard of cases like those I purpose detailing in this report.

On July 21, 1888, I operated on the left eye of Mrs. E. G., an English lady æt. 66, for the extraction of senile cataract. She was in good health, but of gouty diathesis—some gouty spasmodic cough at times. The lens was completely clouded. Position and projection perfect. She had never had any severe or acute attacks of gout, although at times she said she was rheumatic. The urine had shown some albumen the year previous, but under the efficient care of her physician, Dr. A. K. Minich, this had passed entirely away.

[1] Since writing the above have devised and been experimenting with a valvular drainage-tube, which will allow the pus to come out but the air to enter. It seems to be a success. C. D., February, 1890.

The operation was made with all antiseptic precautions. The instruments were washed in absolute alcohol; the eyelids and skin around washed with water and soap, then a solution of silico-fluoride of sodium, gr. ¼ ℥s. The latter solution was then instilled freely in the conjunctival sac, after which a 2 per cent. solution of cocaine was dropped in. Everything being ready, the incision of the cornea, upper section, was made, and a large iridectomy. There was no hæmorrhage of any kind from the iris or from the anterior part of the globe which extended into the anterior chamber. After opening the capsule the speculum was removed, and the lens delivered on gentle pressure over the lower lid. No vitreous was lost, and no cortical mass left in the eye. The whole operation passed off beautifully without pain or distress. She counted my fingers very promptly and saw the persons around.

The eye was again well washed with the silico-fluoride of sodium solution, a drop of atropia sulph. gr. ij ℥j instilled therein, to draw the iris away from the incision and prevent any anterior adhesion, and the bandage put on.

On the 22d, after a good night's rest, and twenty-four hours after the operation, the bandage was removed, the external parts of the eye washed with warm water and the eye itself with a solution of boric acid gr. x ℥j. By a candle light the eye was examined and found in good condition. No swelling or pain. The flannel bandage was removed and a Liebreich bandage put on, which was lighter and more comfortable.

On the 23d the eye was again washed the same as the day previous, and found remarkably well; vision was excellent. Permitted to sit up in her rocking-chair all day now. On the 24th still doing so well. On the 25th called to see her as usual and found her in splendid mood and condition, as there had been no pain or discomfort since the operation, and she was looking forward to the pleasure of again seeing. About an hour or two after I left her she was taken suddenly with an attack of very acute pain in the eye, extending up through the left half of the head. She had had no rest during the night, but thinking it would pass away, did not send for me, knowing that I would call the next day. When I called she was still suffering, and on removing the bandage I found the following condition of the eye: Pupil dilated, iris pushed forward towards the cornea, anterior chamber containing a large quantity of blood. Tension of the ball very great, + 3 to full extent. Vision reduced to the merest perception of light. All the appearances and symptoms of glaucoma fulminans. A solution of salicylate of eserine gr. ij ℥j was instilled into the eye, and repeated three times that day. It gave relief and the next day the hyperæmia began to break up.

This treatment was continued for two or three

days in the hope that the blood would be absorbed so that I could make another iridectomy. But as the blood was taken up it was perceived that the iris was pushed directly against the cornea, leaving not the least anterior chamber. I was then obliged to wait, hoping eventually to be able to get room enough to pass a small v. Graefe knife through the cornea without catching the iris, and then remove a large piece of the latter. During these days she would suffer at times with attacks of pain in the head. The tension of the ball kept up. After the absorption of the blood the vision began to improve for a few days, but then dimmed again.

It was not until fourteen days after the first attack, and under the constant instillation of the eserine solution, that I was able to make a good free iridectomy. This was done directly downwards, and at the same time lacerate the posterior capsule. The eye healed after this last operation very nicely, but developed very little vision; only light, especially when from the temporal side, and at times fingers could be seen. Sight seemed to improve for a while, then became less and less until it was almost nothing. I regretted that I could not make the iridectomy sooner, but it was utterly impossible to do so. I feel sure that if such an operation could have been done a few days after the attack, the sight would have been saved, as in the cases mentioned below.

It has been one of the phases of my professional life that, when I have a very interesting and uncommon case, within a year a similar one is sure to come under my observation, so on October 26 of the same year I removed a cataract from the left eye of Mr. James M., an English gentleman æt. 71. Position and projection was perfect. Right eye incipient cataract, but patient able to get around without assistance. Rheumatic, gouty diathesis, although then in excellent health. Urine free from albumen or sugar The operation was made just as the previous one and under the same antiseptic precautions. The capsule was found very tough. The lens came out on pressure, and the vitreous presented itself immediately after, but none came out of the incision.

October 27. All well. Eye washed with boric acid solution. No swelling or pain.

October 29. Eye did well until 1 A.M., when very severe pain set in, extending up into the head. The bandage was removed and applications of warm water made over the eye. When I saw him the pain was not so severe, but pupil was dilated, anterior chamber reduced, with a considerable hæmorrhage therein, and tension +3. Otherwise eye looked well.

The case of Mrs. G. coming immediately to my mind, I determined to make an iridectomy as soon as possible, and as the blood in the anterior chamber was so much less than in her case, I felt I could do it in a day or two after the use of eserine. So on the second day after the instillation of a 2 gr. solution of eserine, finding the hyperæmia gone, I operated. The eye then gave very little trouble; tension reduced to normal and cure took place. After the eye was well the posterior capsule, which had become opaque, was drawn out with the hook.

On January 21, 1889, his vision was with + 9 D. ⌒ + 3.5 D. cyl. 165° $6_1^{I}{}_2$, and + 13 D. ⌒ + 3.5 D. cyl. 165°. He read 1.05—.

Fortunately, in this case the anterior chamber was not so shallow as to prevent an iridectomy at an early day, the performing of which I am sure saved the eye from loss.

Another interesting case, although not reaching the fulminating form of those previously mentioned, but of well-marked symptoms of acute glaucoma, came before me in a hospital patient this year. Mrs. McG., 58 years old, well developed, rather stout and in good health. Right eye cataract—has been coming for the past three years. Position and projection perfect. Left eye, incipient cataract. Right eye extraction; upper iridectomy and lens removed on pressure without any mishap. Eye did remarkably well with excellent vision until the ninth day, when a sharp pain suddenly set in in the eye and head, vision became dimmed. I saw her soon after the attack and found the pupil somewhat dilated and iris pushed forward toward the cornea, with ball very hard. Tension + 3. Eserine solution gr. 4 ℥i was instilled at once, and a 2 gr. solution that evening and next day, when iridectomy was made. The pain was relieved on the instillation of the eserine and tension began to recede, but fearing a return on discontinuing the use of the eserine, the operation was performed.

Fourteen days after the last operation she was discharged with a good eye and vision + 10 D. = $\frac{6}{6}$.

In these three cases atropia gr. 2 ℥j was instilled once only, and then immediately after the operation. I have for a long while made it a rule to use the mydriatic at this time so as to remove the likelihood of the iris falling back into the incision in any way. In looking over the literature in relation to the development of glaucoma after the extraction of cataract with iridectomy, I am surprised to find so little in relation to it.

Bowman appears to be the first to call attention to it, for in the London Ophthalmic Hospital Reports, Vol. v, p. 1, he recites two cases in which there was great increase of tension after extraction of the lens and iridectomy. He says that it appeared to arise from an irritable condition of the nerves of secretion passing over into a paralytic state. Carter is the next to write of the glaucomatous condition which may arise after extraction with iridectomy, and recommends the incision of the posterior capsule.

These two are the only writers that I have seen

so far who mention the occurrence of this condition, and in an experience of twenty-five years with large hospital service, these few cases are the only ones which have come to my notice. I have had many cases of iritis in different forms and at times subsequent to the operation of extraction, but never any developing of the marked glaucomatous symptoms and appearances as here related.

I regret exceedingly my inability to have been able to make the second iridectomy at an early date in the first case described, for I really think that then the vision could have been saved; but when the chance came, it was too late, the eye having suffered already too severely from the glaucomatous process.

The question would naturally arise, What could have been the cause of the sudden attack of glaucoma in such an aggravated form in these cases? Priestly Smith, who has studied the pathology of glaucoma very thoroughly, after consideration of the ideas of all the other writers, claims that an insufficient circumlental space predisposes the eye to glaucoma, and this insufficiency may depend upon: 1, the increasing size of the lens which comes with advancing years (Just here the query would come in, does not the eyeball reach its full growth and the lens its full size by 25 or 30 years of age?); 2, subnormal size of ball or of the ciliary zone, depending possibly on senile contraction—I would remark also here that most cases I have seen have been with full round eyes, and how about cases in young persons and children, that occasionally occur?—3, from the excessive size or prominence of the ciliary processes, which may be present at any time of life.

Among the exciting causes of primary glaucoma is congestion of the uveal tract which involves enlargement of the ciliary processes, which leads to compression of the infiltration angle. This may arise, as suggested by Bowman years ago, in a sudden paralytic action of the nerves of secretion causing an interference in the circulation, creating a morbid process in the ciliary processes throwing out an undue secretion into the vitreous, too rapid to pass from the vitreous into the aqueous chamber. Being thus impeded in the filtration process, a filling of the vitreous chamber takes place and a pressing forward occurs. This is seen by the advancement of the lens and iris toward the cornea accompanying the increase of tension. In the cases above described there was no insufficiency of circumlental space, as the lenses had been removed, but the posterior capsules remained intact attached to the zone of Zain, making a curtain, as it were, in front of the vitreous, which perhaps interfered with the free infiltration between the chambers. The escape of the fluid being retarded, the intraocular pressure naturally rises, the circulation in the ciliary processes becomes obstructed, swelling of the tissue takes place and an unusual condition of vascularity occurs; and in some cases hæmorrhage may emanate from an atheromatous condition.

It must be remembered that a single iridectomy in a glaucomatous eye does not always relieve it from the danger of a recurrence at some future day, and that another iridectomy would be necessary to save the eye.

I feel that more of such attacks of glaucoma after cataract extraction occur than we are aware of; that they have been overlooked, because not expected, and when developing have been classed as iritis.

In all cases of extraction of cataract, where there is a sudden interference in the regular and smooth course of healing, a careful examination of the tension should be made daily, and when any increase is found, instillation of eserine be made, and then, like Carter, I would recommend the rupture of the posterior capsule, preceded or accompanied as the case may be, in many instances by an iridectomy.

ANOTHER TWELVE MONTHS OF PERITONEAL SURGERY—FIFTY-SEVEN CASES.

BY HENRY T. BYFORD, M.D.,

PROFESSOR OF DISEASES OF WOMEN AT THE POST-GRADUATE MEDICAL SCHOOL OF CHICAGO, GYNECOLOGIST TO ST. LUKE'S HOSPITAL, SURGEON TO THE WOMAN'S HOSPITAL OF CHICAGO.

Having, at the annual meeting of the Chicago Gynecological Society, October, 1888, reported my peritoneal sections for the year ending June 30, 1888, I have thought it best to commence this report with July 1, 1888, in continuation with the old one.

MORTALITY.

Perhaps the most interesting subject for us to examine is the mortality, and our first inquiry will be, what kind of cases usually get well, and in what kind do most of the deaths occur? All abdominal sections in which there were no adhesions (sixteen in number) recovered. All vaginal sections (sixteen in number), with and without adhesions, got well, excepting one in which the death depended upon general conditions, viz: delirium tremens and its complications. In the series of forty-eight cases of last year, all abdominal sections without adhesions (sixteen in number) got well, excepting two cases of hæmorrhage due to the employment of the prevalent imperfect methods of tying the pedicle.[1] This accident ought not to have occurred, and has not occurred to me since. As far, therefore, as these 105 cases are determinative, I feel justified in inferring that cases of abdominal section for removal of the uterus or appendages in which there are no ad-

[1] I am including exploratory incisions in which the adhesions were not interfered with.

hesions or development in the broad ligament (the patient being in good condition for operation), ought to recover in all except rare cases of unavoidable accidents. Of the twenty-one cases of vaginal section of last year all recovered, making, with those of the present year, thirty-seven cases with one death, or a mortality of 2.7 per cent. Hence I also infer that vaginal section, in the cases in which it is indicated, is at present safer than abdominal section.

When extensive adhesions, development in the subperitoneal tissue, or pus accumulations occur, we have desperate cases to deal with, and get a high death-rate after our operations. Of the eight deaths in this series five belonged to this class, viz: one malignant and four developed in the broad ligament.

Another cause for a high mortality is the debilitated and often septic condition of the patient at the time of the operation. One patient was so nearly destroyed by a pyosalpinx that the operation was done as a last resort. In one case the abdominal cavity was at the autopsy found healthy, and the death caused by exhaustion and suppuration of hypodermic needle punctures in the thigh. This was also a last resort case. In another case of carcinoma of the cervix the operation (vaginal hysterectomy) was the easiest and most perfect operation I had yet done, but the patient had taken morphine and alcohol to such an extent that she died of their effects. In another case a patient with uterine sarcoma died, three weeks after the operation, of inanition. This case I have not included in the mortality, as no connection between the operation and the death could be found by the pathologist at the autopsy —the wound was healed.

One of the most important things in the development of peritoneal section must be the elimination of the accidental. But for a sponge left in the abdominal cavity in one case, the infection by an assistant in another, and an accidental and unnoticed rupture of the stump sac in another case, the general mortality would be 8.77 per cent., instead of 14 per cent.

Yet the experience derived from these eight fatal cases has been of much more value to me than that derived from the forty-nine recoveries. Indeed, I regard it about as difficult to become a first-class peritoneal surgeon without an extensive experience with fatal cases, as for a rich man to go to heaven.

DIAGNOSIS.

If what I have said should prove to be in accord with the experience of others, then, by means of an accurate diagnosis of the local and general conditions, we can speak thus to our patients: To one, "Your chances of surviving the operation are 98 or 99 in 100; the danger need not deter you from seeking its benefits;" to another, "Your chances are 90 in 100, but your disease will not shorten your life—do not take the risk;" to another, "Your chances are from 80 to 90 in 100, but the remote risk is greater; take your chances now, lest they be worse hereafter."

Accuracy of diagnosis is difficult, but not impossible of attainment, and will perhaps only be attained by those who have opportunities for verifying and correcting the diagnosis by peritoneal section. Its want is one of the most conspicuous imperfections of abdominal and pelvic surgery, yet one of the most valuable attainments.

SUBSEQUENT HISTORY.

The determination of the utility of these operations depends largely upon the remote results. In a few of the cases of oöphorectomy for diseased appendages the cure has been immediate and complete, but in the majority the improvement has been gradual. As months pass by the reports become more and more favorable. It has been an agreeable surprise to note the excellent results in hystero-epilepsy and mental failure. I have altogether removed ovaries for such mental conditions in twelve cases, with immediate or rapid recovery in five cases, gradual improvement in six cases, and a persistence of symptoms in one case. I am in consequence inclined to regard it as an operation of great value not only in cases entirely dependent upon pelvic disease, but in those in which ovulation or menstruation is only an exciting cause. It is often a necessary step to the cure, and makes the cure by other means possible.

SHALL WE EXHAUST ALL OTHER THERAPEUTICAL RESOURCES BEFORE PERFORMING PERITONEAL SECTION FOR DISEASED APPENDAGES?

I would answer, if that means to try all remedies, decidedly no—not any more than I should try version, embryotomy, symphisiotomy, ergot, etc., before resorting to Cæsarean section in a case of labor at term with a conjugate of one inch. After examining and studying my case I would claim the same right of judgment, and not wait until too late to operate in the one case any more than in the other.

CURE OF RETROVERSION.

I have to report the cure of four cases among the eight of retroversion and retroflexion in the vaginal ovariotomies and oöphorectomies. This was accomplished by leaving an iodoform gauze tampon under and in front of the replaced cervix uteri for forty-eight hours after the operation. The exudates and adhesions about the stumps and between the anterior and posterior walls of the recto-uterine pouch often fixes the uterus in the position in which it was tamponed. If the uterus fall back into retroversion when the tampon is removed, it may tear loose a recent adhe-

sion and cause some disturbance, as it did in three cases; but this is of course only temporary.

AFTER-MANAGEMENT.

I seldom give opiates, and consider them often injurious. Yet, after the bowels have moved the main objections to their use have subsided, and indications for them may arise. There are cases in which they are required almost immediately after the operation, to insure quiet. The time when they are contraindicated is, I think, from the end of the first to the end of the fourth twelve hours P. O. By paralyzing peristaltic action they favor adhesions of the intestinal loops in the positions in which they were placed or pushed at the operation, and which may be such positions as will prevent the intestines resuming normal functions.

The most valuable and striking action of salines is when they are administered during the second and third twelve hours for symptoms of intestinal obstruction, viz: tympanitis and regurgitation, without nausea, of all fluid taken, often following a few hours of gastric quiet. In such cases the saline acts by filling the intestinal loop with fluid and favoring normal peristalsis, tearing them loose from their adhesions and forcing the fluid through them.

It has been supposed by many, as well as myself, that twenty-four hours was long enough to leave the forceps on the broad ligaments in vaginal hysterectomy; yet I report a case of almost fatal hæmorrhage following their removal in thirty-six hours (No. 7). With regard to the advantages of forceps, the question is not whether in the concrete case the forceps or ligatures are better or safer, but rather, which can in the given case be best applied. When the uterus can be pulled down, five ligatures can be applied to each broad ligament quite rapidly and safely; when the uterus can not be pulled well down the forceps reach better. The quintuple ligature, when the parts can be pulled down, is safer than the forceps, because the broad ligament is not of equal thickness throughout, and portions of it are liable to receive too little pressure by the forceps and either bleed or slip out.

A number of the charity cases were done before classes ranging from thirty to fifty students, and recovered without a bad symptom.

In one case, Sophie N., three sections were made upon the same patient, a vaginal oöphorectomy, a laparo-hysterorrhaphy, and an inguinal oöphorectomy. The ovary having been drawn forward by the hysterorrhaphy, I at last entered the abdominal cavity by way of the inguinal canal.[2]

In the few abdominal hysterectomies the stump was treated extraperitoneally, and each time with success. In one case (No. 2) I adopted a new method by separating the bladder and anterior vaginal wall from the cervix and fixing the stump extraperitoneally in the vagina.[3] When practicable I should call it, as far as the subsequent condition is concerned, preferable to abdominal fixation. I have since employed it successfully in two other cases, and to my utmost satisfaction.[4]

[2] See Transactions of Chicago Medical Society for Dec. 16, 1889.

SUMMARY.

	Whole No.	Recovered.	Died.	Per cent. Recovered.
Ovariotomies—Abdominal.				
Intraperitoneal tumors	11	10	1	90.9
Subperitoneal tumors	7	3	4	42.8
Ovariotomies—Vaginal	3	3	. . .	100.
Oöphorectomies—Abdominal.				
For diseased appendages	15	13	2	86.6
For general conditions	2	2	. . .	100.
Oöphorectomies—Vaginal.				
For diseased appendages	5	5	. . .	100.
For general conditions	1	1	. . .	100.
Hysterectomy—Abdominal	4	4	. . .	100.
" Vaginal	7	6	1	85.3
Laparo-Hysterorrhaphy	1	1	. . .	100.
Exploratory incision	1	1	. . .	100.
Summary	57	49	8	86.
Mortality, excluding subperitoneal ovarian tumors, is 8.7 per cent., viz.:	50	46	4	91.3

MEDICAL PROGRESS.

STROPHANTHUS IN INFANTILE DISEASES.—M. MONCORVO has treated infantile diseases with strophanthus, and comes to the following conclusions: As a diuretic and for combating cardiac disturbance strophanthus is invaluable in infantile therapeutics. Its action is prompt and energetic. It is perfectly innocuous. The tincture in mitral or aortic lesions with hyposystole and oliguria restores cardiac tone, regulates the rhythm, and strengthens the pulse. In infantile pneumonia or broncho-pulmonary affections, accompanied by cardiac weakness, strophanthus is a valuable heart tonic. M. Moncorvo has not observed any marked influence on the nervous system or temperature. The action of strophanthus persists long after the treatment has been discontinued. M. Moncorvo employed an alcoholic tincture, in doses varying from 4 to 28 drops in twenty-four hours.

GONORRHŒAL INFLAMMATION OF THE EYE.—Kemény (*Centr. Bl. für Bak. und Parasitenkunde*) reports a case of accidental autoinfection of the right eye with gonorrhœal virus in the person of a soldier, who was suffering at the time from acute gonorrhœa. Actual proof of the character of the conjunctival inflammation was furnished by the discovery of gonococci in the secretion. The gonococci were found, as in urethral gonorrhœa, in the protoplasm of the pus corpuscles.

[3] See Transactions of American Gynecological Society for 1889.
[4] See Transactions of Chicago Medical Society for Dec. 16, 1889.

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SATURDAY, MARCH 15, 1890.

THE NAVAL MEDICAL CORPS.

The approaching close of the medical college terms renders pertinent and timely the suggestion of one desirable field of professional occupation open to the young graduate who has been well educated, to wit: the medical corps of the United States Navy, in which there are now *eleven*, and will be during the year, independent of possible casualties, *thirteen vacancies*. From the very creation of this department of the naval service by Act of Congress, approved March 27, 1794, contemporary with the establishment of a naval force, this corps has maintained its high professional standing by the exclusion of unqualified candidates, and by a subsequent examination of the assistant surgeon, formerly five, but now only three years after his admission, before he is recommended for promotion to the grade of surgeon, which examination successfully passed, his future depends upon his own conduct as an officer and a gentleman.

For many years the applicants for admission into this corps far exceeded the vacancies, and they comprised the best element among the young graduates. The Board met annually in the spring, after the college commencements, and successful candidates awaited the occurrence of vacancies, the entire number rarely succeeding in obtaining commissions, those not doing so consequently having to renew their examination the following year. Recently this has not been the case, the number of applicants not having been sufficient to meet the demand.

The position of the medical officer in the navy is an attractive one. When on sea service he has the opportunities for travel in foreign countries, where his official position admits him to the highest social circles, while his duty on shore is always at the large sea-ports, at which the navy-yards, naval hospitals and naval establishments are located, and where facilities for study as a diversion exist which do not come to his young confrère in the army.

The reputed severity of the Naval Board examination has doubtless deterred many well-qualified young men from presenting themselves; but those who have passed declare that they were asked nothing which a well prepared graduate in medicine should not know, while inspection of the written work of rejected candidates, which is filed at the office of the Surgeon-General of the Navy, and is accessible to those candidates and their friends, satisfies the inquirer that no other decision was possible.

The routine procedure for admission into the medical corps of the navy is practically the same as that for the army. Permission is granted by the Secretary of the Navy, after formal application, to young men between 21 and 26 years of age, of sound physical condition and properly attested moral character, to present themselves for examination by the Naval Medical Board, composed of medical officers of the higher grade. After the preliminary examination the candidate prepares an autobiographical sketch, detailing his opportunities for acquiring an education, and afterwards an essay on some assigned professional topic and written answers to a series of comprehensive questions in the various departments of medicine. An oral examination follows by the several members of the Board, in the presence of all, upon each branch of medicine and upon such collateral studies as the candidate may have pursued, with the object of ascertaining, not so much the amount of information he may have acquired by rote, as the extent of his understanding of the fundamental facts and principles which constitute the science of medicine. Finally extemporaneous chemical and pharmaceutical exercises, the clinical diagnosis and treatment of actual patients in hospital, the adjustment of surgical apparatus and appliances, and the performance of operations

upon the cadaver exhibit, his acquaintance with the practical requirements of the healing art, and his fitness to assume its responsibilities under the emergencies which sometimes place the issue of life or death upon his unaided knowledge and skill. Manifestly such a course of examination, written, oral and practical, satisfactorily determines whether the candidate has received a good education in medicine, and is only such as should be required of every aspirant for a doctor's degree. The subsequent second examination preliminary to promotion to the grade of surgeon, *three* years after admission, presupposes a wider practical acquaintance with the various branches of medicine and a familiarity with its current literature.

The interest of the Bureau of Medicine and Surgery in the young naval medical officer does not end with his examination. Opportunities for self improvement are liberally provided, and individual research and investigation are encouraged by the supply of apparatus, instruments or other facilities required, and by the publication of essays voluntarily contributed, as well as by the requirement of annual statistical, medical and sanitary reports from every officer in charge of the medical department of a vessel or station.

The medical officer of the navy, at the very outset of his career, is made to understand that his first duty as a physician is to protect the community in which he is established from the ravages of disease, and herein the medical corps of the navy usually exemplifies the real mission of the medical man in civil as in military life—to place those who are under his care in the best possible sanitary condition; to zealously guard against the operation of preventable causes of disease; to antagonize the morbific agencies that elude his vigilance, and thus to reduce to a minimum the necessity for therapeutic measures; and, finally, to use natural agencies for purposes of cure whenever these can replace pharmaceutic administration. The sanitary supervision of a community like the navy is much simplified by the preliminary physical examination of every officer and enlisted man—adults and adolescents—who enter it, and by their compulsory subjection to regulated habits in food, drink, personal cleanliness, etc. The immature and the very old, the weak and decrepit, women, with their special train of ailments, and those predisposed to disease—classes which in civil life outnumber all the rest—are excluded from enlistment, so that the duties of the medical officer are free from many of the disagreeable and painful attendants of the practice of medicine on shore. Except for the incidents of war, epidemic visitations, or the vicissitudes of the sea, his work on well-disciplined and well-appointed vessels and at naval stations will be chiefly that of sanitary supervision.

The pay of the assistant surgeon while on leave or waiting order is $1,000 a year, on shore duty $1,400, and at sea $1,700, with a ration in money of thirty cents a day, making his initial sea-pay $150.75 a month. After passing his second examination, three years after his original appointment, he is entitled Passed Assistant Surgeon and receives $1,500 on leave or waiting order, $1,800 on shore duty, and $2,109 at sea, with an increase of $200 in each of these if not promoted to surgeon within five years. After attaining the grade of surgeon his pay is progressively increased every five years until twenty years after date of commission, when it remains stationary. The pay of the medical officer of the navy after reaching the grade of surgeon, therefore, ranges from $2,000 to $3,000 while off duty, $2,400 to $4,000 while on shore duty, which is usually accompanied with commodious public quarters, and $2,909 to $4,509 while on sea duty. The Surgeon-General holds the rank and receives the pay of Commodore, to wit: $5,000. The pay of the medical officer continues without intermission from his entrance into the service until the time for his retirement after forty years' service or on attaining the age of 62 years, after which, until his death, he receives three-fourths of the highest sea-pay of his grade, although he is not called upon for any duty. Should he die from causes originating in the line of his duty, his widow and minor children receive the pension provided by law for his rank.

The numbers and grades of the naval medical corps as now established are as follows: Fifteen *Medical Directors* having the relative rank of Captain in the navy (Colonel); fifteen *Medical Inspectors* ranking with Commander (Lieutenant-Colonel); fifty *Surgeons* ranking, according to seniority, with Lieutenant-Commander (Major) or Lieutenant in the navy (Captain in the army), and ninety *Passed Assistant* and *Assistant Surgeons* of the rank of Lieutenant or Ensign (First and Second Lieutenants in the army). The in-

crease in the number of ships will soon necessitate a reorganization of the *personnel* of the navy, and it is, therefore, probable that the medical corps, with the other branches, will receive a large accession of numbers and increase of pay.

SIMPLICITY THE SEAL OF TRUTH.

Dr. Robert Koch, in the minds of many the foremost scientist and physician of living Germans, is in manner of life the personification of simplicity. His demeanor is said to be so plain and free from self-assertion that, by comparison with him, certain others of his *confrères* of the Berlin profession appear haughty and unapproachable. As an illustration of Dr. Koch's habits, it is said that when he travels he is quite as apt to be found taking a third-class railway ticket as any other, while the majority of his students would consider their dignity compromised by anything less than a second-class passage. In other matters as well are indicated attributes of mind and character which place him in the right line of descent from the great Boerhaave, whose favorite motto was "*Simplex sigillum veri.*" And this is the legend that is graven on his monument in the St. Peter's church at Leyden, by her grateful citizens, a fact which has put in the months of thousands the admirable sentiment, "Simplicity is the seal of truth," hundreds of whom have probably dwelt but lightly on their debt to the great professional talents of him whose life was squared to that rule. Simplicity is the trait of the master, while the lack of it seems entirely natural to the novice. As it is the single flower that produces the seed, while the double one beside it perishes with its beauty, so there is that singleness of purpose and simplicity of method that bear the fruit of life-saving discoveries, such as the genius of Boerhaave gave to his generation and such as Koch's labors promise to yield in surpassing measure.

PERMANENT DUTIES FOR THE ANNUAL MEETINGS.

An amendment offered by Dr. Gihon which proposes to change the first day of each annual meeting from Tuesday to Wednesday will come up in its order at Nashville.

While this subject is under discussion it would seem desirable also to consider the propriety of making the dates of the annual meetings permanent.

In the present number of the Journal we publish a list of thirty-eight State Medical Societies, the names and addresses of the secretaries, and also the places and dates of their annual meetings for the current year.

These societies are all of them closely affiliated with the Association, and none desire that their State meetings shall conflict with those of the Association. It so happened last year that the Illinois State Medical Society had previously named May 20, 1890, as its next date of meeting. Later, and as a matter of convenience to those who were to entertain the Association, its next annual meeting was set for the same day. As a result the officers of the Illinois State Medical Society were obliged to issue notices to all their members and to change the time of their State meeting from May 20th to May 26th, as announced in the Journal of March 1. Referring to the table it will also be found that the annual meetings of the State Societies of Michigan and Missouri are to be held on the same day. It is desirable, if possible, that in these States such arrangements may still be made as to conserve our common interests.

When we remember that thirty-eight States are each year to determine the dates of their meetings, it is obvious that unless all are advised as to a fixed time when the Association shall hold its meetings, such conflicting appointments will constantly occur.

It seems necessary therefore, that as in times past we fix upon a definite day in May for the meetings in the South and upon the corresponding day in June for those in the northern sections of the country, and that these dates be made perpetual.

EDITORIAL NOTES.

HOME.

Explanatory Note.—The address of Dr. Jacobson, entitled "Homœopathy and Medical Progress during the Present Century," to which reference was made in an editorial last week as appearing in that number, will be found in the present issue of The Journal.

New York County Medical Association.—Dr. George Tucker Harrison, the Vice-President of the Association, has been elected to the Presi-

dency, made vacant by the decease of Dr. C. S. Wood. Dr. S. B. W. McLeod has been elected to the Vice-Presidency.

Bequests to New York Charities.—Under the will of the late John Jacob Astor, St. Luke's Hospital will receive $100,000, and the new Cancer Hospital an equal amount.

An Emergency Hospital has been provided at Denver, Col., by the members of a voluntary society, known as the Associated Charities. For the time being, the hospital will be located at a house which has been rented for its use.

Prize Essay.—The Medical Society of the State of New York offers a prize of one hundred dollars, payable from the Merritt H. Cash prize fund, for the best original essay on any medical or surgical subject. The conditions are: That the competitors shall reside in the State of New York; that the essays shall be either printed or type-written; that each essay shall be designated by a motto on the title page; that a corresponding motto, together with the name of the writer, shall be enclcosd in a sealed envelope and attached to the essay; and that all esays shall be sent to the chairman of the Committee on Prize Essays, Dr. George F. Shrady, New York, prior to January 1, 1891.—F. C. Curtis, Secretary. Dr. Daniel Leroy, of New York, and Dr. Eugene Beach, of Gloversville, are other members of the Committee.

Chicago Polyclinic.—A special course of nine or more lectures on "Abdominal and Pelvic Surgery," with demonstrations on dogs and cadavers, will be given at the Chicago Polyclinic by Profs. N. Senn, C. T. Parkes, Chris. Fenger and W. T. Belfield, beginning March 24.

New York Dispensary.—The New York Dispensary, which is the oldest institution of the kind in the city, and probably in the country, has just issued its centennial report. It was founded in 1790, and is not only the oldest, but the largest dispensary in New York. In presenting this report of its increasing work for a hundred years, the Board of Trustees call special attention to the territory in which its ministrations are carried on, which includes within its borders the poorest part of the city, where the assistance which such an institution can give is most constantly in demand; and also state that, notwithstanding the size of this territory (larger than that of any other dispensary in the city) and the number of its regular patients, medical and surgical aid is also given to the deserving poor of other parts of the city. In the hundred years of its existence, the medical staff has treated an aggregate of 2,142,999 patients, and at the present time as many as 500 cases are treated in a single day. During the year just closed there were 44,331 new cases; a larger number than in any preceding year.

FOREIGN.

Sickly Children at Two Dollars.—When Stanley's expedition reached Usambiro, the station of Missionary Mackay, on the south shore of the Victoria Nyanza, the sick-list was so heavy that a halt for rest was imperative. Mr. Mackay soon found that the feeble and sick children were being bought up by the natives, for two goats apiece; so that he was led to purchase about twenty-five weak children, "On Mission account," to save them from slavery. To use his own words: "The amount I have paid is two dollars per head."

Dr. Mackenzie's Successes in the Courts.—Sir Morrell Mackenzie has won another libel suit, as we are informed by cablegram, the *St. James' Gazette* having been mulcted to the extent of $7,500, or just ten times the sum that the *London Times* had to contribute to his solacing, as the result of a similar suit. Dr. Mackenzie has been fortunate both at Court and in the courts.

Pennsylvania Hospital Appointment.—Dr. Morris Lewis has been appointed to succeed the late Dr. James H. Hutchinson as member of the medical staff of the Pennsylvania Hospital.

A Venerable Virginia Physician.—Dr. Thomas T. Slaughter, of Madison County, Virginia, was a graduate from the University of Pennsylvania in 1820, and who has continued in practice sixty-four years, retiring only about a year ago. He is now in his eighty-sixth year and the senior graduate of his school in the Old Dominion State.

Cholera in Asia.—The Russian Government has sent Dr. Avedik Babajew, who is the head of the Sanitary Department at Tiflis, to Persia, to report on the cholera in that country. A case of cholera is said to have occurred at Bologna. On investigation it was found to be one of sporadic, and not Asiatic, cholera.

TOPICS OF THE WEEK.

AMERICAN PHYSIOLOGICAL SOCIETY.

With the wish to encourage physiological research, a member of the American Physiological Society has offered two hundred and fifty dollars for the best research or researches bearing on the subject stated below, viz.:

"The regeneration of severed spinal nerves in mammals, including man, with special reference, 1, to the reunion and return of function in such severed nerves, without degeneration of the distal portion; 2, to the possibility of union with return of function between the central portion of any one spinal nerve and the distal portion of any other (*e. g.*,, the central portion of the ulnar with the distal portion of the median)."

Conclusions to be supported, so far as possible, by histological as well as physiological evidence.

The competition is limited to residents of North America, and the prize to be awarded for original work done after January 1, 1890.

The award will be made by those persons who on October 1, 1891, constitute the Council of the American Physiological Society.

In making its award, the Council will take into consideration researches of which printed or legibly written accounts, marked on the outside "Nerve Physiology Prize," have been received by the then Secretary of the Society before October 1, 1891.

Previous publication will not debar a research from the competition, provided the work has been done after January 1, 1890.

The Council reserves the following rights: To withhold the prize if, in its opinion, no research presented is sufficiently worthy; to award only a part of the prize if, in its belief, a research, though meritorious, does not deserve the whole; to divide the prize between two or more candidates in ratios which seem to it just; and if it think it desirable, to require a competitor to demonstrate his experiments and histological preparations to a committee appointed by the Council.

For the present, communications concerning prize should be addressed to H. NEWELL MARTIN, Sec'y,

Johns Hopkins University, Baltimore, Md., February 10, 1890.

STRANGE VARIATIONS.

The fact is, we are passing through a period of strange variations in climate and temperature. Under the influence of unknown forces the adjustment of normal heat and cold seems disturbed, and the usual order of things appears reversed. Winter has certainly gone astray. There has been unusual moisture, unusual heat, unusual everything; and the present season is a practical illustration of the French saying, that nothing save the unexpected is perfectly sure to happen, and "weatherologists" are aghast. Winter is warm and summer is cold, the wind blows great guns, and the times are sadly out of joint. The year that has gone will long be remembered as the warmest and the wettest since the establishment of the Signal Service in 1871. Whether the general conclusion is warranted that the climate of the north temperate zone is gradually changing may be a matter of doubt. But certainly the climatic phenomena have been of a unique and peculiar character. And if these general atmospheric conditions are continued through the present winter, it will be sufficient to place them among the most remarkable freaks of weather that have ever been recorded.

It is about two years now since the remarkable rainfall began to be apparent. The average annual rainfall from January, 1871, to December, 1877, was about 44 inches; in 1888 it was 52.95 inches, and in 1889 it was about 59 inches. Including these two years, the average for the last nineteen has been nearly 46 inches. The average temperature for the year 1889 was much higher than that of most preceding years, the excess of heat amounting altogether to several hundred degrees. Last year there was a deficiency of heat almost as great. Several times during the year of 1889 the rainfall was so heavy as to cause disastrous floods. The worst of these, of course, was the memorable flood of Johnstown. The great storm of September 9, 10 and 11 will never be forgotten. For three days a terrific gale prevailed, the Sandy Hook peninsula was turned into an island, and hundreds of houses were surrounded by water, and their inmates cut off for several days from all communication with the outside world. Taking these things into consideration, it seems to be evident that some cause out of the ordinary run has been at work during these two years, and surely nothing could be more propitious for the rapid spread of influenza than the remarkable changes that the weather is at present undergoing.—*Medical Classics.*

THE PSYCHOLOGY OF EPIDEMICS.

Every epidemic carries in its train curious exaggerations of many well-recognized characteristics, and these frequently call for appreciation and for treatment almost as much as the disease in which they originate. Perhaps one of the most striking of these mental perversities is to be found in the idea that the epidemic is to be treated by "common sense," or by nostra which have been largely advertised, or by specifics which are known to the laity mainly through their frequent mention in the daily press. Those suffering under this delusion feel that it is wholly unnecessary to seek skilled assistance, and they boldly dose themselves with remedies of whose power and properties they are absolutely ignorant. In Vienna it has already been found necessary to forbid the sale of antipyrin except under doctors' prescriptions, as no less than seventeen deaths were attributed to stoppage of the heart's action owing to overdoses. The freedom with which the prescription of this remedy has been assumed by the public has long since been viewed with anxiety by the medical profession, and frequent warnings have already fallen upon deaf ears; and yet it is to be feared that if the epidemic of influenza should spread, many more examples of recklessness will have to be recorded. Mr. Labouchere, claiming to act "by the light of common sense," upon having "a cough, a headache, and an all-overish ache," accompanied by sneezing, diagnosed

the prevailing epidemic and at once administered to himself "thirty grains of quinine," and to meet the cough he took "unlimited squill pills." He writes that the one "settled the fever" and the other "settled the cough," and that in four days he was quite well. Upon this last fact he is certainly to be congratulated, though we trust that others may not be impelled, "by the light of common sense," to follow him in such heroic measures, or to emulate his example by trying the effect of antipyrin in similar unlimited doses. It is serious enough to cope with an epidemic and its sequelæ, without having matters complicated by ignorant and reckless experimental therapeutics.—*The Lancet.*

DANGER OF FLUSHING THE PERITONEUM WITH SUBLIMATE.

Of all the recent innovations in abdominal surgery, flushing or irrigation of the peritoneum is undoubtedly the most popular in the best sense of the word. Operations for the removal of diseased uterine appendages, electrolysis for fibroids, and complicated manœuvres in the region of the gall bladder, duodenum, stomach, or kidney are seldom taken in hand except by experts. Every surgeon, hower, may be called upon to open the peritoneal cavity, and one of the best safe-guards against the dangers of intraperitoneal operations is flushing of the peritoneum, judiciously performed. The success of this practice has urged many surgeons to seek yet higher success by various modifications.

Mr. Lawson Tait uses fresh water, and others can claim high success where the peritoneum is flushed by the same unsophisticated fluid. But the antiseptic school of operators have largely adopted this practice. Of necessity, they had to take a great physiological problem into consideration: How much of the antiseptic must be mixed with the water poured into the peritoneum so as to ensure asepsis without poisoning the patient?

The merits of the antiseptic and the opposite school are not the purpose in the present argument. Surgeons of the former school believe than an antiseptic agent should be mixed with the water; so they are right to estimate the virtues and dangers of that agent. Dr. Gellé has shown (*Annali di Ostetricia e Ginecologia*, Florence, 1889) that sublimate is a perilous compound for flushing. He describes three cases of ovariotomy where a 1 in 10,000 solution of perchloride of mercury was employed. In the first case, violent abdominal pain and vomiting took place during the night after operation. On the morning a scarlatiniform rash appeared on the face, trunk and arms. No rise of temperature or salivation occurred. By the third day all bad symptoms disappeared. The second patient died from exhaustion through diarrhœa, fifty-two hours after the operation, where the walls of a dermoid cyst were sewn to the edges of the abdominal wound. Interstitial nephritis was discovered. In the third case parovarian cysts were removed. Obstinate vomiting lasted for two days. How far the sublimate was to blame, especially in the second case, which was incomplete, it would be hard to determine. Dr. Delbet's important researches must not be overlooked. He has shown that a large amount of the water first poured into the peritoneum is actually absorbed, especially if it contain a little table salt. In fact, the process is a true transfusion, more likely to act as such on the circulation than Dr. Münchmeyer's practice of injecting water into the subcutaneous cellular tissue, as a substitute for transfusion of blood in hæmorrhage after labor. Transfusion, however, is not what is wanted in flushing the peritoneum. What is especially to the point is another fact discussed by Delbet. After a certain amount of water has been poured into the peritoneum, no more can be absorbed; then strong antiseptic solutions can be added without fear of absorption, provided that they be displaced by a final injection of pure water. This process might have prevented the serious results in Gellé's cases. Unfortunately, though a very pretty physiological experiment, Dr. Delbet's method is complicated. The second flushing with an antiseptic solution, followed by a third with pure water, is hardly in accord with the principles of the strict antiseptic school, for, according to them, the third would undo all the good done by the second. Carbolic acid is almost as likely to irritate as sublimate, if injected in a sufficient amount to counteract sepsis. No wonder, therefore, that the majority of antiseptic surgeons prefer, we believe; sterilization of the water by prolonged boiling.

Flushing of the peritoneum has, in short, been widely adopted in abdominal surgery, with excellent results. Like all other surgical proceedings, it requires to be done carefully. It certainly displaces clots and noxious solid or fluid materials. It also checks, if it does not actually stop, hæmorrhage. It counteracts the shock due to the chilling of the viscera, whatever M. Pollaillon's experience may show to the contrary. Lastly, the transfusion of water into the blood, though not aimed at by the surgeon, is no doubt beneficial. Judging from the experience of "non-antiseptic" surgeons, pure water answers all purposes with safety. The question was the subject of instructive correspondence in the *Journal* last autumn. If, however, it should some day be shown that some antiseptic should be added, that agent will not be sublimate.—*British Med. Journal.*

THE HENRY W. GRADY, ATLANTA, GA., GENERAL HOSPITAL.

The genial, brave, and philanthropic editor of the *Atlanta Constitution*, "being dead, yet speaketh." As a monument to his greatness and goodness of heart, the authorities of Atlanta have appropriated $30,000 to erect a city hospital to bear his name, and the generous impulses of the citizens have led them to contribute $15,000 more. It does not seem to be doubted that at least $100,000 will be raised to establish this monument to Mr. Grady, which will, at the same time, prove a blessing to the people of Atlanta. This will be one of the very few general city hospitals in the South. Why cannot the push of Richmond merchants secure a like provision for the sick of Richmond who may need it?—*Virginia Medical Monthly.*

PRACTICAL NOTES.

CONCERNING THE EFFECT OF VENTILATION ON THE MICROÖRGANISMS SUSPENDED IN THE AIR.

Dr. Richard Stern (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) made his experiments in a room in which he could have perfectly quiet air, or a more or less complete ventilation. The openings in the walls of the rooms were so arranged that he could admit the air from without, either at the upper part near the ceiling and convey it off near the floor on the opposite side of the room (winter ventilation), or the air could be admitted near the floor and conducted out on the opposite side of the room near the ceiling (summer ventilation). The rapidity of the ventilation was also under complete control.

The air of the room was intentionally loaded with microörganisms. Pure cultures were mixed with the dust collected from school-rooms and factories. This was then dried and pulverized and blown about in the room. The air was then examined for the number of microörganisms, by Petri's method, at various times.

The conclusions arrived at are:

1. That the microörganisms rapidly sink to the floor in quiet air. The finer the dust upon which the micro-örganisms rest the slower the gravitation.

2. The usual ventilation, effecting a renewal of air from one to three times an hour, has no effect upon the removal of microörganisms with summer ventilation, and only to a very limited extent with winter ventilation.

3. Ventilation, effecting a more rapid renewal of air (six or seven times to the hour), does affect the removal of microörganisms, but is scarcely to be attained without a sensible draught.

4. A rapid and complete removal of the micro-örganisms from the air is only attainable with a strong draught.

5. Microörganisms are not blown off from the floor, walls, furniture, clothing, etc., even with the stronger draughts.

6. The evolution of steam in a room is not capable of rapidly and completely precipitating the microörganisms, although it hastens this process to a not very appreciable extent.—*Medical News.*

ANTIFEBRIN AS A HYPNOTIC FOR CHILDREN.

Amongst the many hypnotics which at present are being so liberally supplied by the chemists to the medical profession, it is well not to lose sight of the value of antifebrin in certain groups of cases. Although the drug suggests more than its action is to hinder the development of febrile condition, or, when that condition exists, to lower the temperature, still in many cases in my practice it has proved a valuable hypnotic and analgesic.

Its value has been most evident in cases of broncho-pneumonia, croupous pneumonia, and bronchitis, and that more especially in cases where children have been the sufferers. The marked relief which has frequently followed its administration has in many cases been extremely gratifying. Cases of fretful insomnia of the young, possibly partially caused by pain, fever, or general *malaise*, have been speedily relieved by the drug, and from six to eight hours of refreshing sleep have been induced. After sleep the awakening was natural, there being no excitement or confusion of thought. There was no period of excitement observed before the drug took effect. Along with the onset of sleep there was a fall of temperature, frequently a copious perspiration, at the same time the respiratory acts were slowed and the pulse-rate diminished. In no case have any evil effects been noticed, although the success of the drug induced its employment in a large number of cases.

The need of a safe hypnotic for children, such as antifebrin seems to be, will, I think, be readily appreciated, the number of cases where it is required being unfortunately very large. It is still further enhanced as a serviceable drug for children by the fact that it is comparatively tasteless, and also by the smallness of its dose; the dose being from two to five grains, depending of course on the age of the child. A useful way of prescribing it, I have found, is to place the powder on the dorsum of the tongue either alone or mixed with a little powdered sugar. It might also be given in the form of a mixture—the drug being insoluble in a watery menstruum—suspended by the aid of mucilage and sweetened by any of the various flavoring syrups. There is yet another important advantage in hospital and general practice over many recently introduced hypnotics, in the comparative cheapness of the drug.—John Gordon, M.D.—*British Med. Jour.*

IS PHENACETIN A REMEDY IN WHOOPING-COUGH?

Dr. R. Heimann, of Landau, answers the above question affirmatively, having used the drug experimentally in a case in which antipyrin entirely failed. The success was so surprising that he administered the drug in two other cases. It reduced the number of paroxysms, which had been from ten to fifteen per diem, to three, and on some days they entirely ceased, only reappearing at night when no phenacetin was given. Dr. Heimann gave a boy of three years six grains in four doses of one grain and a half, a girl of two years five grains in three doses, and an infant of seven months three grains in four doses, without observing the slightest ill effects. One grain and a half of phenacetin would, on the average retain its effect for three hours.—*The Lancet.*

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Amminol as a Sewage Disinfectant—Meeting of the Pathological Society—Signs of Osteo-Arthritis, Periostitis and Senile Atrophy on Bones and Skulls of the Ancients—Chloroform Superior to Ether as an Anæsthetic—New German-English Medical Dictionary.

When the late Commission on Metropolitan Sewage finished its exhaustive inquiry in 1884, the commissioners recorded their deliberate conclusion that "no known process of precipitation purifies sufficiently;" but since then the Amines process has been perfected by Mr. Wollheim, of London, and in the opinion of many competent experts like Dr. Klein, who have examined the results obtained at Wimbledon, the problem has at length been successfully solved. The process derives its name from the fact that for the purification and sterilization of the sewage matter it utilizes certain organic bases belonging to the chemical group of the amines, or ammonia compounds, and whilst chemically efficient, it is said to be so economical that under ordinary favorable conditions it almost pays for itself. The amines, either pure or in the form of amine salts, are used in combination with lime, preferably milk of lime, the proportions varying in accordance with the nature of the sewage and attending conditions. At Wimbledon herring brine is being used, and is introduced into freshly made milk of lime. It is immediately decomposed and a very soluble gaseous reagent is evolved, to which the inventor has given the name of "amminol." This reagent announces its presence by a peculiar briny odor, similar to that of the sea-breeze. Amminol is described as a very powerful disinfectant, and when introduced into sewage it rapidly extirpates all microörganisms capable of causing putrefaction or disease. The disiufectant mixture is added to the sewage as it issues from the sewers, and is thoroughly intermixed with it by mechanical means. The effect is said to be almost instantaneous. By the action of the lime violent flocculation is set up and the suspended matters tend to subside. Simultaneously the putrid smell of the sewage is replaced by the peculiar briny odor of the reagent. In this state the sewage flows into settling tanks, where the subsidence of the solids takes place at a rapid rate. When it is complete (in a depth of 6 feet it is stated to take only half an hour) the clear supernatant effluent, completely deodorized and disinfected, may be discharged with perfect safety. In proof of the efficacy of the purifier it is stated that a sample of sewage which was examined by Dr. Klein contained 2,400,000 organisms in the cubic centimetre, and after treatment by the amines process was found to be perfectly free from organisms. The average cost is stated at from one-half penny to three farthings per 1,000 gallons of sewage, which would be equivalent for London, at an average of 130,000,000 gallons daily, to £125,000 per annum, or something less than a penny rate in the pound. This is little more than one-half the necessary expenditure estimated by Lord Brumwell's committee, and it takes no account of the possible revenue from utilizing the sludge in the form of solid cake or powder for manurial purposes.

At the recent meeting of the Pathological Society of London Mr. Eve showed some specimens of ancient Egyptian bones having signs of osteo-arthritis and periostitis, and some skulls showing senile atrophy. The bones dated from the time of the Ptolemaic dynasty, 1,300 B. C. Among many other interesting specimens two femora were particularly noticed, which showed a periosteal deposit like a frosting of the bone; there was some tipping of the extremities, showing the presence of osteo-arthritis. It was pointed out that the period at which these patients lived was one of high civilization, and the diet was mostly starchy, but nothing is known as to their beverages. A skull was marked with a remarkable symmetrical atrophy occupying a point near the parietal eminences. The outer table and diploe had entirely disappeared and only a thin lamina remained, dotted over with small apertures of blood-vessels. The specimen came from an old person, the bones being lighter than they should be, the jaw was edentulous, and the squittal suture was obliterated. Mr. Eve looked upon it as a case of osteo-arthritic periostitis having no connection with acute articular rheumatism. He thought the decided evidence of change round the vessels excluded the theory of congenital origin.

It is now nearly a year since the memorable cold and gusty afternoon when the reformers among the members of the Royal College of Surgeons found the gates of the institution in Lincoln's Inn Fields closed against them, and were compelled to seek another shelter for their meeting. Their object was to obtain for all members their ancient right to take part in the management of the college—a right which through carelessness had been allowed to lapse into the exclusive hands of the council. For years the grievance has been rankling, but all attempts to remedy it have hitherto failed. The reformers have now prepared a bill for this session of Parliament, by which the interrupted custom would again become part of the college's constitution, A deputation headed by Dr. Dunford Thomas. who throughout the agitation has taken a leading part on the democratic side, waited upon Lord Dunraven and asked him to take charge of this measure in the House of Lords. His lordship

promised to give the request full consideration, and the reformers are now pretty confident that Parliament will at last have the opportunity of settling a dispute which has lasted so long.

At the London Hospital there has been an interesting case of sarcoma of the foot in a patient aged 16 years. Twelve weeks before admission a slight swelling had been noticed above the third toe of the left foot. It was first observed after running, but no kind of injury had been sustained. When the patient came under observation the front of the foot was occupied by a large globular swelling, apparently situated both above and below the metatarsal bones. The swelling on the dorsum was about the size of a large orange, smooth and firm. After removal of the foot an anterior posterior section showed that the growth was mainly situated on the inferior aspect of the metatarsal bones and sprung from the periosteum, especially from the second and third of these bones.

Dr. Roger Williams has made a careful examination of the hospital books, from which it appears that in ten years chloroform was administered at St. Bartholomew's Hospital 12,368 times, with fatal results in ten cases, being about one in 1,236. The most important result of Dr. Williams' investigations, however, is the discovery that when ether, instead of chloroform, has been used during the same period, there were only three deaths out of 14,581 instances. Dr. Roger Williams gives his verdict strongly in favor of chloroform as an anæsthetic.

The growth of science and literature constantly adding to medical nomenclature has long caused to be felt the necessity of a new "German-English Dictionary of Medical Terms." This want has just been supplied by Messrs. Frederick Treves, F.R.C.S., and Hugo Lang. Mr. Treves points out, in his preface, that the march of events has necessitated a thorough recompilation of terms. G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. S. Baruch at the Meeting of the Section on Practice of the Academy of Medicine—Cold Baths in Typhoid Fever.

At the February meeting of the Section on Practice of the Academy of Medicine, Dr. S. Baruch, who was not present at the meeting of the Academy a month before, when the treatment of typhoid fever was discussed, made a stirring and forcible plea for the systematic use of cold baths in this disease. However favorable some of our individual statistics might be, he said, the figures of the Board of Health reports demanded, in language more eloquent than words, that the profession should adopt some means that would enable them to make a more favorable showing. From 25 to 40 per cent. was the death-rate from typhoid in our American cities, and according to Dr. Delafield's investigation 26 per cent. was the death-rate in recent years at the New York Hospital.

Could these figures not be changed? he asked. Happily there was a method of treatment which had the sanction of long usage, the authority of judicious clinical observers, and the evidence of unimpeachable statistics. To further the universal adoption of this method he proposed to devote all his energy, for the reason that he had himself formerly been strongly opposed to it and was now a proselyte. It was unfortunately true, he went on to say, that our conceptions on the subject of hydrotherapy were exceedingly vague, and this was perhaps the chief cause of the absence of unanimity regarding, if not of the antagonism to, its application in typhoid fever, in which its fondest triumphs had been achieved. During a former discussion at the Academy of Medicine Dr. Baruch said he had taken occasion to illustrate the vagueness of the term cold bath as used in this city by citing two cases occurring in two of the largest hospitals, under two of the gentlemen who had spoken disparagingly of the cold bath treatment. One of these patients had the bath (?) administered by being wrapped in a sheet and sprinkled with ice-water until the temperature fell to a satisfactory point. The other was also wrapped in a sheet, which was kept saturated with ice-water by a sponge until the temperature was reduced from 106° to 101°. Surely these were not fair specimens of the cold bath treatment, and the fatal result in both cases could not fairly be charged to this method. The experienced hydrotherapeutist never used ice-water for prolonged application, the aim of all hydrotherapeutic measures being to refresh, to stimulate the nerve centres, and never to induce a sedative effect.

He contended, therefore, that until we adopted an approximately uniform cold bath treatment our discussions of this method would be nugatory and our patients would continue to swell the mortality lists. It had been objected to the Brand method that the physician should not be hampered by strict rules, but should be allowed to use his judgment in each individual case. This might be granted; but at the same time (just as the successful treatment of a tertian intermittent depended upon cinchonism of the patient before the paroxysm was due, whatever might be the manner in which the quinine was administered) the guiding principle, to keep the temperature below 103°, was not to be lost sight of, though the bath might be a little warmer or

colder, or a little longer or shorter, according to circumstances. In the one case cinchonism protected the patient against the return of the attack; in the other the reduction of temperature indicated a condition of the nervous system which protected the patient against the deteriorating influences of the infective process. Another analogy might be drawn from the salicylic treatment of rheumatic fever.

Brand's rule, however, Dr. Baruch said, was not inflexible, as was shown by a letter which he had just received from him in reference to a case the bath treatment of which was detailed in one of our journals. In it he said: "By following my rule is not to be understood such treatment as was given by Dr. — to the child, which was so far reduced in strength and nerve power that it should not have been put into a cold bath, but into a warm one, until it gradually became accustomed to the cold bath, for twenty-four hours. To me it is surprising that Dr. — did not obtain greater disadvantage from the low temperature used in this case; it was a special piece of good luck. I always use warmer baths (usually of the temperature of the room) for twenty-four hours, if the patient has been ill over four days; often also from the beginning." From this extract, he went on to say, it would be gathered that Brand does not advise the plunging of any case into a bath of 65° without regard to individual conditions. The truth was that in no method of treatment was good judgment more necessary than in the treatment of typhoid by the cold bath.

The statistics furnished by men like Juergensen and Vogl were the best possible guide for this or any other country, because they were obtained from hospital practice, civil and military, and they represented the comparative merits of various methods. Military records in Germany were proverbially accurate, and Vogl was the chief of the garrison hospitals at Munich. He offered us the records of 8,325 cases of typhoid treated there during forty-seven years, mentioning each year the type of the disease, derived from symptoms and autopsies, the treatment pursued and the results. The mortality ranged from 40.3 per cent. in 1843 to 2.3 per cent. in 1877–78. Since 1875, when the cold bath treatment was systematically begun, the mortality had never exceeded 4.7 per cent., and the average was 2.7 per cent. To show the carefulness of the records, Dr. Baruch gave a number of extracts taken at random from Vogl's report, and then stated that it might be said, without fear of contradiction, that no therapeutic question had been so thoroughly canvassed as had been done in this report. It demonstrated, among other things, the interesting point that the combined method (water and medicinal) reached quite as high a percentage of mortality as in many of the years preceding, when the expectant treatment was employed, but that the death-rate under the systematic, unremitting bath treatment (Brand method) never exceeded, in seven years, 4.7 per cent., and averaged 2.7 per cent.; neither one of which figures had ever been reached before.

In the Poliklinik at Tübingen Juergensen had obtained even better results. During nine years 217 cases were treated by strict bathing according to Brand, and there was only one death. He used cold compresses for diarrhœa, and continued to bathe even when there was intestinal hæmorrhage. The official reports of the Second German Army Corps showed a reduction of the mortality, under systematic bathing, from 26.3 per cent. to 4.3; and in consequence of this success an order advising the general adoption of this method in the Army was issued by the Surgeon-General. Brand, the originator of the practice, pursued it for thirty years, almost entirely in a private *clientèle*, with the result of one death in 342 cases. Having stated that this wonderful success was due to the strictest attention to detail and the subjection to the bath treatment of every case that showed the slightest suspicion of typhoid symptoms, Dr. Baruch said that it was only by this course that cases could be brought under the influence of the cold bath before the fifth day; a point which is emphasized as essential for reaching the phenomenal success attained in the 1,200 cases reported by Juergensen, Vogl, Brand and the surgeons of the Second Army Corps. If it were objected that it is very difficult to make the diagnosis of typhoid fever before the fifth day, he would reply that the patient should be given the benefit of the donbt and be subjected to the treatment before the diagnosis was established. In fact, he would place every suspicious case of fever in the bath, if the temperature reaches 103°. This was the course pursued at Munich, and he himself constantly resorted to it both in private and hospital practice.

That the sway of antipyretics was now passing away, he went on to say, was evidenced from the recent discussions. The lethal influence of high temperatures was happily losing its hold on the profession; but we should take care that the receding tide did not sweep away the cold bath treatment, which had unfortunately been classed among antipyretic measures. Whenever we gave up this fallacious idea, the cold bath treatment would replace the unsuccessful antipyretic treatment completely. In the Fourth Congress for Internal Medicine, held in 1885, eminent clinicians expressed almost unanimously the opinion "that until we obtain a specific curative agent for typhoid fever, such therapeusis is to be preferred which is capable of diminishing or removing the effects of the morbific agents, that this aim is most surely fulfilled by hydrotherapy, and that medicinal antipyretics act only against temperature elevation, but do not, like the bath, pro-

duce a modifying effect upon the fever process."

He thought it should be clearly understood that the Brand method is not a "nervous sedative," as had been claimed in a recent paper before the New York State Medical Society, but a refreshing measure, by which the depressing effect of the typhoid poison is to be counteracted. The system was tottering under the enfeeblement of all its functions by the effect of the infection upon the nervous system. The impact of cold water upon the periphery deepened the inspiration, more oxygen was inhaled, more carbonic oxide given off; the refreshing impulse was conveyed to the nervous centres from which the heart and stomach receive tone and the secretions activity. The *rationale* of the bath was so simple, he said, that if once appreciated, no attempt would be essayed to substitute it. The gentle frictions carried on while the patient was in the water stimulated the mucous coats of the superficial vessels, which, as Marcy and others had shown, are paralyzed by the infective process; thus giving rise later to heart failure from absence of propulsive aid. These vessels were thus dilated and the obstacle to heat dissipation removed; while the occasional cold douche over the head and shoulders again contracted the vessels briefly. In this way their activity was maintained. How different the effect of simply putting the patient in the cold water and leaving him in it undisturbed for fifteen minutes, or of wrapping him in a sheet and sprinkling ice-water over him, would be, a very little reflection would indicate.

The bath was not intended as a specific, curative measure; but its action was analogous to that of peripheral stimuli applied to other toxic conditions; and the stupor due to opium toxæmia, in which we had a poison circulating in the blood, which required time for its removal, furnished a fair analogy. Our anti-toxic measures would prove efficient in proportion to the earliness, persistency, and good judgment with which we applied them in the one case just as they would in the other.

Dr. A. L. Loomis in discussing the paper said that he was glad that Dr. Baruch was an enthusiast on the subject, and that he was willing to go as far as the law allows, and even a little further, in his advocacy of the method. When he compared the condition met with in typhoid fever to opium poisoning it seemed to him that he did not properly recognize the cause of the typhoid toxæmia, viz.: a specific infection. The two conditions were very different, and he did not see how they could very well be compared. As to the statistics of typhoid, he believed that if we based our opinions on them we were liable to error. During the last two months he had treated twenty cases of the disease by means of the cold coil, without a single death; but it did not follow from this that the cold coil was the best or only treatment to be used in typhoid. Dr. Baruch had unquestionably placed his statistics in a very enticing way before us; and yet he felt convinced that if he permitted himself to be guided wholly by them he would almost surely have reason sooner or later to regret that he had done so. At the same time, if the opportunity occurred to him to treat a considerable number of typhoid cases together he would be glad to give the method so eloquently advocated a thorough trial. From what little experience he had had with cold bathing in typhoid he believed that it was a powerful agent for restoring vitality if properly employed, and that it was a powerful agent for destroying vitality if improperly used. When the cold bath was given without regard to its effect upon the heart, the capillary circulation, etc., it seemed to him that it was liable to do very great harm.

The chairman, Dr. Francis Delafield, said that the point brought out in the paper that in the United States we had never really tried the Brand method he believed was correct; it being a fact that scarcely any one here had considered the whole treatment thoroughly. One reason for this, no doubt, was the inefficient character of most hospital nursing in this country. The great difficulty was to get a sufficient number of nurses for the very exacting requirements of the method. He confessed that he had had the idea that perhaps one reason why the patients treated by strict cold bathing recovered was because they received no medication whatever.

Dr. Baruch said that he was very glad to have been able to show that the main object of the treatment by cold baths was not to reduce temperature, but to furnish a restorative and stimulant to the nervous system. Brand, indeed, never claimed that his method was antipyretic. It was Liebermeister who was the leading spirit in proclaiming that the benefit derived from cold baths was due to their antipyretic effect, and after giving a bath he often administered 40 or 50 grs. of quinine for the purpose of keeping the temperature down after it had been reduced by the bath. But the result of this combined treatment was a mortality of 18 per cent. As to his analogy between typhoid toxæmia and opium poisoning, he granted that the comparison might be defective in some particulars; but, at the same time, he thought the main points would hold good. In both cases we had a profound poisoning of the system; though in one case the poison acted rapidly and in the other slowly. In both the poison would become eliminated in the course of time if we could but support the patient and prolong life until nature could accomplish this; and in both, therefore, the indication was simply to fortify the flagging powers until this could be accomplished. In regard to statistics, it was true that twenty or thirty, or even a hundred cases were of no practical value; but if we had vast numbers of cases,

the correctness of whose data was vouched for by men of the highest scientific attainments and reputation, he believed that such statistics were to be trusted. P. B. P.

"La Grippe" as a Bacterial Disease.

To the Editor:—Doubtless few now living will again have opportunity to observe so typical an illustration of the behavior of "germs" as a pathogenetic factor, as now exists in the prevailing epidemic of so-called "la grippe." The symptoms are notably consistent with its accredited cause, and with those of other familiar diseases of its class. Its fidelity of expression through the *mucous* surfaces is only equaled by its thoroughness in omitting no part of the same. In observing its selection of the lachrymal, nasal, pulmonary, gastric and intestinal surfaces, the writer looked not elsewhere for effects, until the *fourth* instance of severe (in one grave) aural implications and abscess clearly proved its identity in *this* locality. It appears, that nothing shall be lacking in this disease, to impress all doubters with its genuine parentage. Age, sex, condition, occupation, locality, diathesis, are all and equally its subjects. As judged by the meagre reports of its action in the medical press thus far given, its severity is far from uniform. The gastric type, as frequent in the writer's observation, is not only obstinate, but often induces a prostration alarming in degree. With a clean tongue these cases develop a nausea and vomiting which resists all treatment and continues three to six days and nights. These cases, from ejecting the clear seromucous material primarily, persist until blood and dark or coffee-ground ejections appear. Catarrhal symptoms proper are as often wholly absent as otherwise. Who is authorized to christen this nameless (not helpless) visitor? Nosological requirements excluded, it is safe to assume that a legion of its English victims would oppose its revision. More to be desired is a remedy. Assuming the inference correct, that the large class who develop mild symptoms are the subjects of less malignant or potential infection, it is possible that an agent would suffice for relief without the necessity of displaying properties at once germicidal and homocidal.

Characteristics of the disease favor a probability that a cure should be discovered among the agents recognized as antidotal of the class of causes producing it.

H. C. Markham, M.D.

Independence, Ia., January 31, 1890.

Measles is epidemic in some towns in Indiana. In Harrodsburg, a place with a population of only about five hundred, there have been one hundred and seventy-five cases.

BOOK REVIEWS.

A Handbook of Diseases of Women, including Diseases of the Bladder and Urethra. By Dr. F. Winckel, Professor of Gynecology, and Director of the Royal University Clinic for Women in Munich. Authorized translation edited by Theophilus Parvin, M.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia. Second edition, revised and enlarged, with 150 Illustrations. Philadelphia: P. Blakiston, Son & Co.

This publication which has passed rapidly to its second edition is a complete treatise upon the subjects enumerated on its title pages, in a closely printed and richly illustrated volume of 756 pages. The American gynecologists will find many valuable references to eminent authorities on the subjects of which the book treats, but will look in vain, except in one or two instances, for any mention or acknowledgement for American gynecology. The book presents a valuable review of foreign gynecology and serves to the reader a concise picture of its present status. To its eminent editor, whose name alone upon the title page of any book would insure it a reading, is due the thanks of all American surgeons who are unable to peruse the work in its original.

The work is divided into eight sections.

Section 1 includes Anomalies and Diseases of the External Sexual Organs—Historical—under the following chapters: Chapter i., Deformities of the Vulva; chapter ii., Hyperplasia and Hypertrophy of the Vulva; chapter iii., Hernia of the Vulva; chapter iv., Neoplasms of the Vulva; chapter v., Nutritive Disturbances, Inflammation and Exanthemata of the Vulva; chapter vi., Deformities and Diseases of the Vulva-Vaginal Glands; chapter vii., Injuries of the External Genitals.

Section 2 includes Abnormalities and Diseases of the Vagina under the following chapters: Chapter i., The Affections of the Hymen; chapter ii., Malformation of the Vagina; chapter iii., Displacements of the Vagina; chapter iv., Neoplasms of the Vagina; chapter v., Nutritive Disturbances of the Vagina; chapter vi., Neurosis of the Vagina; chapter vii., Foreign Bodies in the Vagina; chapter viii., Lesions of the Vagina and their Results, Vaginal Cicatrices.

Section 3 includes Anomalies and Diseases of the Uterus under the following subdivisions: chapter i., Malformations of the Uterus; chapter ii., Changes in the Form and Position of the Uterus; chapter iii., Neoplasms of the Uterus; chapter iv., Nutritive Disturbances of the Uterus; chapter v., Stenosis and Atresia of the Uterus, Hydrometra and Hematometra; chapter vi., Anomalies of Menstruation.

Section 4 includes Malformations and Diseases of the Fallopian Tubes, under the following headings: Chapter i., Incomplete Development of the Fallopian Tubes; chapter ii., Displacements and Malformations of the Fallopian Tubes; chapter iii., Neoplasms of the Fallopian Tubes; chapter iv., Inflammation and Tuberculosis of the Fallopian Tubes.

Section 5 includes Anomalies and Diseases of the Ovaries, under the following headings: chapter i., Anomalies in Development and Form; chapter ii., Displacements of the Ovaries: chapter iii., Neoplasms of the Ovaries; chapter iv., Nutritive Disturbances of the Ovaries.

Section 6 includes Anomalies and Diseases of the Uterine Ligaments, Peritoneum, and Pelvic Connective Tissue, under the following: Chapter i., Affections of the Round Ligaments; chapter ii., Affections of the Broad Ligaments; chapter iii., Inflammation of the Pelvic Peritoneum, Pelvic Peritonitis; chapter iv., Inflammation of the Pelvic Connective Tissue; chapter v., Intraperitoneal Effusion of Blood into the Pelvis; chapter vi., Parasites of the Female Genitals and Pelvic Connective Tissue.

Section 7 includes Anomalies of the Mammary Glands under the following chapters: Chapter i., Anomalies of Development; chapter ii., Malformations and Diseases of the Nipple and Areolar; chapter iii., Neoplasms of the Female Breast; chapter iv., Nutritive Disturbances of the Female Breast; chapter v., Mastodynia, Neuralgia of the Breast; chapter vi., Parasites of the Female Breasts; chapter vii., Foreign Bodies in the Female Breasts.

Section 8 includes Diseases of the Female Urethra and Bladder under the following: Chapter i., Examination of the Female Urethra and Bladder; chapter ii., Malformations and Diseases of the Female Urethra; chapter iii., Nutritive Diseases of the Female Urethra; chapter iv., Neoplasms of the Female Urethra; chapter v., Neuralgias of the Female Urethra—Foreign Bodies in the Female Urethra; chapter vi., Injuries of the Female Bladder; chapter vii., Neoplasms in the Walls of the Female Bladder; chapter viii., Nutritive Disorders of the Female Bladder; chapter ix., Foreign Bodies in the Female Bladder; chapter x., Neurosis of the Female Bladder.

Report of the Surgeon-General of the Army for the Fiscal Year Ending June 30, 1889.

This report is chiefly occupied with matters pertaining to the health and sanitation of the army in general and of individual posts in particular. A large amount of statistical matter has been arranged to illustrate these points, and interesting comparisons are drawn between the medical relations of our own army and those of European armies. About one-half of the report is made up of statistical reports of diseases treated at the various stations; these have been tabulated with much care. The entire report is a medical history for the year, of 24,726 men, representing the mean strength of the army.

ASSOCIATION NEWS.

American Medical Association.

Section on Diseases of Children.

All members of the American Medical Association who are interested in the subject of Pediatrics, are earnestly invited to prepare papers for reading in this Section at the meeting to be held at Nashville, Tenn., May 20, 1890.

There can be no department of medicine which should appeal to all the workers of the profession more than the diseases of children. The outlook is favorable to a large attendance in this Section.

Please send title of paper to either of the officers of the Section at as early a date as possible.

(Signed) I. N. Love, M.D. Chairman,
Grand Ave. and Lindell Boul., St. Louis, Mo.
E. F. Brush, M.D., Secretary,
Mt. Vernon, N. Y.

Office of the President, St. Louis, March 7, 1890.

MISCELLANY.

Concerning the Tenth International Medical Congress.—I am directed by the Secretary-General of the Tenth International Congress to give the greatest possible publicity to the circular, the main points of which I herewith transmit to you with the request that they be published. Very respectfully yours,

A. Jacobi, M.D.
110 West 34th street, New York, March 7, 1890.

Invitation for an International Medical and Scientific Exhibition.

In connection with the Tenth International Medical Congress to be held in Berlin between the 4th and 10th of August, there is to be an International Medical and Scientific Exhibition. The exhibits will be of an exclusively scientific nature, as follows:

New or improved scientific instruments and apparatuses for biological and strictly medical purposes, inclusive of apparatuses for photography and spectral analysis as far as applicable to medicine.

New objects and preparations in pharmacological chemistry and pharmacy.

New foods.

New or improved instruments subservient to any of the departments of medicine, including electrotherapy.

New plans and models for hospitals, convalescent homes, and disinfecting and bathing insiitutions and apparatuses.

New arrangements for nursing, including transportation, baths, etc.

New apparatuses in hygiene.

Applications or inquiries inscribed "Ausstellungs-Angelegenheit," and accompanied with a printed card con-

taining the name and address of the firm thus applying, ought to be directed to the Secretary-General, Dr. O. Lassar, Carlstrasse, No. 19, Berlin, N.W., Germany.

R. Virchow, President.

E. von Bergmann, E. Leyden, W. Waldeyer, Vice-Presidents.

O. Lassar, Secretary-General.

HEALTH IN MICHIGAN.—For the month of February, 1890, compared with the preceding month, the reports indicate that cerebro-spinal meningitis, cholera morbus, inflammation of brain, dysentery, measles, whooping-cough, typho-malarial fever and inflammation of kidney increased, and that typhoid fever and cholera infantum decreased in prevalence.

Compared with the preceding month the temperature was slightly lower, the absolute humidity was less, the relative humidity was the same, the day ozone was less, and the night ozone was more.

Compared with the average for the month of February in the four years 1886–1889, influenza, measles, cerebro-spinal meningitis, cholera morbus, and membranous croup, were more prevalent, and cholera infantum, typhoid fever, typho-malarial fever and scarlet fever, were less prevalent in February 1890.

For the month of February, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was much higher, the absolute humidity was more, the relative humidity was less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of February, 1890, at 58 places, scarlet fever at 77 places, typhoid fever at 34 places, measles at 69 places, and small-pox at 2 places.

Reports from all sources show diphtheria reported at 3 places less, scarlet fever at 15 places more, typhoid fever at 14 places less, measles at 42 places more, and small-pox at 2 places more in the month of February, 1890, than in the preceding month.

A PNEUMATOSCOPE.—The cable brings news of the invention of a wonderful instrument in Berlin, by means of which an exact differential diagnosis of diseases of the lungs will be possible. The inventor is Dr. Janiczewski. The description of the instrument is too indefinite to permit of an understanding of its *modus operandi*.

THE physicians of Vienna having complained that patients make use of old prescriptions to obtain medicines, the Minister of the Interior has ordered that the physician who does not desire his prescription to be repeated may write upon it the words "*ne repetatur*," in which case the druggists will have no right to re-fill it.

LETTERS RECEIVED.

Dr. A. W. Strickler, Scottdale, Pa.; Dr. Barre, Pittsburg, Pa.; Dr. Carl Brumme, Detroit, Mich.; Dr. D. Bryson Delavan, New York; Dr. G. A. White, Sacramento, Cal.; Dr. G. F. Cook, Oxford, O.; Dr. F. F. Hume, New York; Dr. F. H. Stewart, Church Hill, O.; V. Ruzicka, Baltimore, Md.; Dr. A. C. Stokes, Trenton, N. J.; Dr. A. C. Lamothe Ramsay, St. Cloud, Minn.; Dr. F. Harris, Langford, S. Dak.; G. P. Rowell & Co., New York; Dr. S. P. Deahofe, Potsdam, O.; J. Walter Thompson, New York; Dr. R. J. Dunglison, Philadelphia; Dr. Frank H. Holland, Ft. Pembina, N. D.; F. A. Davis, Philadelphia; Dr. W. R. Nottage, Westport, Mass.; Dr. Chas. Denison, Denver, Col.; Dr. P. M. Carnrick, New York; M. R. Barrett & Co., Chicago; Dr. J. Berrien Lindsley, Nashville, Tenn.; Dr. E. W. Bartlett, Milwaukee, Wis.; C. A. Young, Nashville, Tenn.; Geo. F. Child, Chicago; Dr. J. R. Barnett, Neenah, Wis.; P. Blakiston, Son & Co., Philadelphia; National Typewriter Co., Boston; Joseph Robbins & Co., Quincy, Ill.; Dr. S. C. Ayers, Cincinnati, O.; Dr. Theophilus Parvin, Philadelphia; Dr. G. W. Gallagher, New Haven, Pa.; Allen & Yates, Buffalo, N. Y.; Philip J. Mitchell, Philadelphia; Dr Giles S. Mitchell, Cincinnati, O.; Gustav E. Stechert, New York; Dr. G. K. Dickinson, Jersey City, N. J.; Dr. C. H. Wilcox, Berwick, Ill.; E. L. Shurley, Detroit, Mich.; Jas. Walker, Leeds, Eng.; The Paquin Vaccine Co., Columbus, Mo.; Dr. Geo. L. Eyster, Rock Island, Ill.; Dr. W. B. Heuderson, Pittsburgh, Pa.; Dr. Henry Marcy, Boston; Dr. C. Green, Beaver City, Neb.; A. J. Howe, Cincinnati, O.; Dr. C. I Miller, Whitewater, Wis.; Dr. Geo. Weber, Brooklyn, N. Y.; Dr. A. L. Hummel, Philadelphia; Med. Dept. Univ., Washington, D. C.; Dr. A. J. Brobst, Macungie, Pa.

STATE MEDICAL ASSOCIATION MEETINGS IN 1890.

STATE.	SEC'YS NAME AND ADDRESS.	TIME AND PLACE.
Alabama	T. A. Means, Montgomery.	Birmingham, April 8.
Arkansas	L. P. Gibson, Little Rock.	Little Rock, May 14.
California	W. W. Kerr, San Francisco.	Los Angeles, April 15.
Colorado	H.W. McLanthlin, Denver.	Denver, June 17.
Connecticut.	N. E. Wordin, Bridgeport.	New Haven, May 28.
Dakota	R. C. Warne, Mitchell.	Sioux Falls, June 12.
Delaware	J. A. Ellegood, Laurel.	Wilmington, June 10.
Florida	A.W.Knight, Jacksonville.	Key West, April 8.
Georgia	King P. Moore, Macon.	Brunswick, April 16.
Illinois	D. A. Graham, Chicago.	Chicago, May 6.
Indiana	E. S. Elder, Indianapolis.	Indianapolis, May 14.
Iowa.	C. F. Darnell, West Union.	Des Moines, April 16.
Kansas	J. E. Minney, Topeka.	Salina, May 13.
Kentucky.	Steele Bailey, Stanford.	Henderson, May 14.
Louisiana	P.B.McCutchon,N.Orleans.	Baton Bouge, May 13.
Maine.	C. D. Smith, Portland.	Portland, June 10.
Maryland.	G. A. Taneyhill, Baltimore.	Baltimore, April 22.
Massachusetts.	F. W. Goss, Boston.	Boston, June 10.
Michigan	Geo. Duffield, Detroit.	Grand Rapids, May 20.
Minnesota.	C. B. Witherle, St. Paul.	St. Paul, June 19.
Mississippi	W. E. Todd, Jackson.	Jackson, April 21.
Missouri.	J. C. Mulhall, St. Louis.	Excelsior Sp'gs, May 20.
Nebraska	M. L. Hildreth, Lyons.	Beatrice, May 13.
North Carolina	J. M. Hays, Oxford.	Oxford, May 27.
N. Hampshire.	G. P. Conn, Concord.	Concord, June 16.
New Jersey.	W. Pierson, Orange.	Schooley's Mountain, June 10.
New York.	E. D. Ferguson, Troy.	New York, October 22.
Ohio.	G. A. Collamore, Toledo.	Columbus, June 3.
Pennsylvania.	W.B.Atkinson,Philadelphia.	Philadelphia, June 10.
Rhode Island.	W. R. White, Providence.	Providence, June 12.
South Carolina.	W. Porcher, Charleston.	Laurens, April. —
Tennessee.	D. E. Nelson, Chattanooga.	Memphis, April 8.
Texas.	F. E. Daniel, Austin.	Fort Worth, April 22.
Vermont	D.C. Hawley, Burlington.	{ Rutland, June 26. { Montpelier, Oct. 9.
Virginia.	L. B. Edwards, Richmond.	Rockbridge Alum Sp'gs, August or September.
Washington.	C. L. Flannigan, Olympia.	Spokane Falls, May 14.
West Virginia.	J.L.Fullerton,Charlestown.	Wheeling.
Wisconsin.	J. R. McDill, Milwaukee.	Milwaukee, June 4.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 1, 1890, to March 7, 1890

Major J. P. Kimhall, Surgeon U. S. A., granted leave of absence for twenty days. Par. 1, S. O. 25, Dept. of the Missouri.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 8, 1890.

Medical Inspector W. K. Schofield, ordered for examination preliminary to promotion to Medical Director.

Surgeon D. McMurtrie, ordered for examination preliminary to promotion to Medical Inspector.

Asst. Surgeon Manley F. Gates, detached from Navy Yard, League Island, and to the U. S. S. "Kearsarge."

Asst. Surgeon H. N. T. Harris, detached from the U. S. S. "Kearsarge" and ordered home.

CORRIGENDUM.

In an editorial heading on page 385 of the present issue, referring to the annual meetings of the Association, read Permanent *Dates* for the Annual Meetings instead of Permanent Duties.

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ORIGINAL ARTICLES.

THE PROPHYLAXIS OF TUBERCULOSIS.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. C. WILSON, M.D.,

PHYSICIAN TO THE HOSPITAL OF JEFFERSON COLLEGE, ETC., OF PHILADELPHIA.

This communication is based upon the fact, now incontrovertible, that the tuberculous diseases, including pulmonary phthisis, are specific infections due to a common cause, namely, the tubercle bacillus of Koch.

The purpose is to submit certain vexed questions concerning this group of diseases, of which pulmonary phthisis may be taken as a type, to the tests by which the same questions in regard to other diseases, universally admitted to be infectious, have been definitely settled.

These questions are:

1. Is pulmonary consumption hereditary?
2. Is it contagious?
3. Is it preventable?

The solution of these questions is a matter of the gravest consequence to mankind. Whether the facts in our possession at present are sufficient in number and adequate in bearing to enable us to solve them remains to be seen. We are certainly in a position to approach the problem with some degree of confidence. At no former period in the history of medicine has the profession had in its possession in regard to any specific disease whatever such a store of well worked out facts as it to-day holds concerning tuberculosis. This material has been collected by a host of workers in many lands, some of whom have been stirred by the brilliancy of Koch's original discovery, others by the importance of the results of their own labors in this field of pathology, all by the hope of knowledge upon which to base a rational therapeutics and an efficient prophylaxis. That such questions remain unanswered is due to many causes, among which not the least active is that conservatism which demands conclusive proof of the truth of new opinions—a conservatism, which, while it often appears to impede the progress of knowledge, in point of fact, always makes that progress the more sure.

1. IS PULMONARY CONSUMPTION HEREDITARY?

There is no difficulty about the meaning of the term. Racial, national, family characteristics are transmitted with precision from one generation to another. Physical conformation, facial peculiarities, even to little tricks of expression, the gait and bearing, are transmitted from parents to children for series of generations. The same is true of the nervous organization and the mental characters. In the domain of pathology we find the tendency to diseases dependent upon peculiarities of physical organization distinctly transmitted by heredity. Here diseases of the mind and nervous system at once attract attention; so also diathetic diseases, as gout, rheumatism, and the like. Hereditary diseases of this kind are liable to occur at any period of life, but they are especially prone to show themselves at those epochs which bring peculiar strain upon the structures weak by inheritance. Thus certain forms of insanity and functional nervous diseases show themselves at puberty and the menopause; while chronic affections of the kidneys, the skin, or the joints are apt to develop after the middle periods of life when the organs of elimination are habitually over-taxed.

But when we come to study the part played by heredity in the infectious diseases, the conditions are very different. These diseases are not due in any sense to peculiarities of physical organization; they are the manifestations of the reaction of the organism to pathogenic influences from without; they are due to positive specific infection. It is true that the infectious diseases also may be in a certain sense hereditary. They are not rarely congenital. The records of medicine show conclusively that children born of mothers suffering from the fevers, the exanthemata, and other infectious diseases, often show at birth, or shortly thereafter, the characteristic manifestations of the maternal infection. This is especially true of syphilis which Neelsen[1] has grouped along with tuberculosis, enteric fever, and leprosy in fourth group of germ diseases—namely, the mycoses with tissue proliferation or infective ulcers.

Syphilis, like tuberculosis, is a chronic disease,

[1] Archiv. f. Klin. Chir., 1884.

and affords favorable opportunities for the study of the subject of the transmission of an infection by heredity. Thus a syphilitic mother may bear in succession, so long as the infection remains active, several children presenting the manifestations of transmitted syphilis in various degrees of intensity. In these cases a child born apparently healthy, at the end of three or four weeks, without possibility of contagion, and in the absence of the initial lesion of the acquired disease, presents certain definite symptoms, symmetrical in distribution, transitory in duration, typical in evolution, polymorphic, corresponding to the secondary manifestations of acquired syphilis.

Departures from this general rule show themthemselves in two directions; on the one hand, the disease in the mother may cause the intrauterine death of the fœtus; on the other hand, the infant may pass through the secondary stage of inherited syphilis without the manifestation of symptoms which attract the attention of its nurse. Such cases, as Hutchinson[2] has pointed out, are common, and have their exact parallels in the acquired disease. Those, however, who have shown no symptoms in infancy may yet suffer in later life. Such individuals constitute a group of cases described under the term of "late hereditary syphilis."

"It is clearly to be understood, however, that when this happens to adolescents, they suffer from a class of symptoms wholly different from those of infancy. It is not that the secondary stage has been delayed, but simply that it has been passed through without ostensible disturbance. If secondary symptoms of the kind described are to occur at all, they will show themselves in infancy, and, in a vast majority of cases, within the first three months of life.[3]"

Another very important fact in regard to hereditary syphilis must be here noted, namely, that there are no trustworthy data which indicate that the subjects of the inherited taint can in turn transmit it to their children. On the other hand, there is abundant evidence to show that those who have suffered by inheritance may become the parents of children absolutely free throughout life from any manifestations of the disease whatever. Nor is there any warrant for the assumption that such individuals inherit special proclivities to diseases in consequence of the taint of the parents. To again quote Hutchinson[4]: "There is no evidence nor probability in support of the conjecture that syphilis is in the third and fourth generation the cause of any chronic diseases of the skin or of any form of scrofula."

It is important to note, at this point, that in the fevers, the exanthemata, and in syphilis there is general infection by the blood. In each of them the infecting principle has its local point of attack, and rapidly extends to the blood.

Tuberculosis, on the other hand, is, in the large majority of cases, a local process throughout its whole course. When animals inoculated with sputum or other substances containing tubercle bacilli are killed in a short time, the lesions are invariably found restricted to the point of inoculation and the adjoining lymph glands. The tuberculous wart upon the hand of the pathologist is an insignificant local affair, which, after a time, degenerates into a fibrous nodule and then disappears. More serious inoculation wounds in the human subject give rise to local tuberculous ulcers, with implication of the lymphatic system to which the affected tissues are tributary. Gerber[5] accidently inoculated himself by a cut on the left hand in the examination of the lungs of a patient who died of consumption. Swelling of the axillary and infra-clavicular lymphatics followed. These glands, upon being removed six months subsequently by Mikulicz, were found to contain tubercle bacilli. Six months afterwards the patient was in good health and presented no signs of disease of any organ. Gerber has collected a number of cases which show the tendency to the localization of tuberculosis by wound-infection in man.

Tuberculosis of the lymphatic glands, the so-called scrofulous glands, affords another example of the limitation of the process. Such glands do not usually infect the neighboring structures, unless they undergo caseation and softening, and the capsule of the gland has been destroyed by inflammatory ulceration. The modern surgical treatment of superficial lymphatic glands that have become tuberculous, by nucleation is a practical application of our knowledge of the localization of the tuberculous processes.

Joseph Coats[6] has recorded a case in which a remarkable localized tuberculous condensation was found in the lower part of the upper lobe of a child's lung. This condensation was of a mottled appearance, due to the occurrence of caseous areas in the midst of a generally grey or red basis. There were a few isolated areas of tuberculous condensation near the large one and a patch of similar character in the other lung. Other parts of the lung were normal. On opening up the main bronchus on the affected side, there was found a small aperture in its wall communicating with a large caseous gland, which was firmly adherent to the bronchus. The advanced lesions in the gland and the recent lesion of the lungs indicated that the local implication of the lung was caused by the insufflation of virulent tuberculous matter chiefly through the main bronchus of the affected side, to some extent also upon the other.

[2] Syphilis. Lea Bros. & Co., Philadelphia, p. 74.
[3] Hutchinson, opus cit., pp. 94–75.
[4] Opus cit., p. 78.
[5] Deutsche Med. Wochenschr., No. 16, April 18, 1889.
[6] On the Pathology of Phthisis Pulmonalis, London, 1888, pp. 170–172.

I exhibited at the Pathological Society of Philadelphia last year a specimen of tuberculosis of the right pleura, due to the rupture of a tuberculous abscess of the vertebræ, in which there were no tuberculous lesions of the compressed lung of the affected side, nor of the left lung, nor of any other organ. The frequency with which sub-peritoneal tubercles are found in connection with the tuberculous ulcers of the intestines with the evidence of an extension by the lymphatics without tuberculous peritonitis, on the one hand, and of general tuberculous peritonitis without implication of the intestine, on the other, affords a further illustration of the tendency to localization, which is characteristic of the tuberculous processes in general.

This tendency to restriction of the tuberculous processes is also shown in the post-mortem appearances presented by the lungs in pulmonary consumption. Here we find old cascating lesions with extensive necrosis associated with more recent lesions, the distribution of which plainly indicates the extension of the process by means of infection through insufflation of the infecting material by way of the branches of the bronchial system into new portions of the lung and into the other lung. The frequency with which local obselescent tuberculous lesions are found in the lungs of individuals dying at an advanced age, shows that this local process is capable of undergoing resolution *in situ*. The progress from a focus of infection in the lungs to other portions of the lungs is not only by way of the bronchial tubes, but also by way of the lymphatic structures. The extension of the process to the other lung, to the larynx, and to the intestine are also examples of local infection proceeding step by step along continuous tissue surfaces and not by the blood.

In the words of Coats,[7] "Tuberculosis is a process in which surfaces and canals are concerned, and scarcely at all the substance of organs, except in so far as these are penetrated by channels."

The constitutional manifestations of active tuberculous processes are not directly due to the bacilli, but to toxic principles—ptomaines, evolved during their growth and multiplication. Nencki[8] obtained upon chemical analysis of tubercle bacilli substances soluble in alcohol and ether, which when used experimentally upon animals showed the presence of a tetanizing poison. This substance has not been isolated. Bonardi[9] demonstrated in tuberculous sputum alkaloidal organic bases, which, introduced into rats and guinea pigs, rapidly produced remarkable disturbances of the nervous system. This experimenter believes that these organic bases may explain the fever, sweating disturbances, of the nervous organization, and other general symptoms of the disease.

There is no evidence that tubercle bacilli multiply in the circulating blood itself. They unquestionably sometimes enter the circulation through extensive or advanced lesions, and give rise to scattered tubercles in the liver, kidneys and other organs; but nothing like an infection of the blood, such as take place in other general infectious diseases, is encountered, except in that condition known as acute general tuberculosis. Here we have to do with an acute fatal disease of brief duration, corresponding in many respects with some of the specific fevers—a disease which, as Ponfick pointed out, is due to the sudden loading of the blood with tubercle bacilli in enormous amounts. Tuberculous lymphatic glands at the root of the lung may, by extension of the process, give rise to a tuberculosis of the thoracic duct. Acute general tuberculosis develops upon the discharge of a sufficient quantity of the infecting principle into the blood. Weigert[10] has pointed out a more common source of the bacilli in the blood in this infection, namely, caseating tuberculosis of the wall of a vein, not leading to occlusion by thrombosis; and has reported three cases in which the splenic vein was involved, two in which the portal vein, one the hepatic, one the azygos, two the anonyma, one the left internal jugular, one the supra-renal, and one the thyroid. In about half the cases observed the pulmonary vein has been the vessel affected.

It is thus evident that, except in the case of acute general tuberculosis, the tuberculous diseases do not correspond in their pathology with the acute infectious diseases which are hereditary. Furthermore, demonstrable congenital tuberculosis in the human fœtus is among the rarest of pathological conditions; for a long time no example of this condition had been discovered. The view that congenital tuberculosis may be due to the semen or ovum is a pure hypothesis unsupported by proof. The opinion that it may be derived from the maternal blood by way of the placenta rests upon a small number of positive facts. Malvoz[11] found that microörganisms may pass the placenta only when it is diseased. Charrin[12] found in a seven and a half months' fœtus of a tuberculous woman, which died three days after birth, tuberculous lesions of the abdominal organs. Merkel[13] discovered cheesy nodules in the palatine arch, the lymph-glands and in the neighborhood of the hip-joint, but not in the lungs, of the child of a tuberculous woman, which died directly after birth.

It is probable that such cases of congenital tuberculosis are due to acute general tuberculosis of the mother.

[7] Opus cit., p. 192.
[8] Cited by Hammerschlay, Correspondenz-Blatt. f. Schweitzer Aerzte, Oct. 1, 1888.
[9] Trans. Med. Acad. Pavia, March 3, 1888.
[10] Cited by Coats, opus cit., p. 253.
[11] Amer. Pract. and News, Nov. 24, 1888.
[12] See Whittaker, Universal Annual of the Medical Sciences, 1889, Vol 1, p. A-4. [13] Ibid.

Baumgarten[14] supports the view that congenital tuberculosis may be latent, with the bacilli remaining inactive in certain cases through years or throughout life, unless called into activity by traumatism or other influences. Should this view be established, it may explain, in certain cases, the presence of tubercle in the lymph glands, bones and marrow; but it will in no way invalidate the argument against the transmission of pulmonary consumption, or intestinal tuberculosis, by heredity.

In regard to the hereditary transmission of tuberculosis among the domestic animals, the statistics of the Berlin abbatoir, cited by Cornet,[15] are not without interest. Among 320,000 calves seventeen were tuberculous; among 398,000 cattle there were not less than 8,000 tuberculous.

In very young children primary infection takes place chiefly by way of the intestine, less frequently by the lungs—facts fully in accord with what is known of the mode of communication of the disease. The conclusion that enteric fever or scarlet fever is hereditary would rest upon very nearly the same basis of fact upon which the doctrine of the hereditary nature of tuberculosis has been assumed, namely, that the parents of those having these diseases have previously suffered from them, and that in a few rare instances the child of an infected mother has shown the characteristic signs at birth.

But it is not upon facts of this kind that the prevalent doctrine is based. It rests upon facts of a wholly different kind—upon facts analogous to those upon which we found our views concerning the hereditary nature of diseases due to peculiarities of physical organization and to the diatheses. Thus Thompson[16], using data obtained from the Brompton Hospital, investigated eighty family histories which were apparently complete. The total number of children in these eighty families was 385, an average of nearly five for each family. Of these, 203 were males and 182 females. Disregarding those who died in childhood, namely, 21 males and 16 females, who may or may not have been affected with tuberculous diseases, there remain 348, of whom 194, namely, 98 males and 96 females, during subsequent life developed pulmonary tuberculosis, leaving 154, namely, 84 males and 70 females, who remained exempt. The assumed inheritance was from the father in 24 cases, from the mother in 30, from both in 14, and from the *grandparents in 12*.

Theodore Williams[17], investigating cases in private practice, found that among persons affected with pulmonary phthisis the disease could be traced to relatives in 48.4 per cent. of the cases.

Hérard and Cornil found that of 100 cases not less than 38 had sprung from parents who had been tuberculous, and suggests that if to this number were added those whose *grandparents had been tuberculous*, we should probably have one-half of all cases showing hereditary predisposition.

This doctrine of heredity, which has constituted a serious obstacle to the general recognition of the infectious nature of tuberculosis, is in point of fact due to the view formerly prevalent, that pulmonary consumption was a diathetic disease, a view to which such terms as "tuberculous diathesis" and "pre-tuberculous stage of consumption," until recently in current use, bear testimony. So long as this view was entertained, statistics like those of Thompson, Williams and others had a certain significance; but if the tuberculous diseases are infectious processes, these statistics are not only wholly without value, but absolutely misleading.

If the thirty-seven children in Thompson's series who died in childhood had certainly died of tuberculous diseases shortly after birth, that fact would have been quite in accord with what we know of the transmission of infectious diseases by heredity; but that 194 of the remaining 348 should at some period of life later than childhood develop an infectious disease in consequence of heredity, is not only not in accord with the recognized laws governing the transmission of the infectious diseases, but absolutely contrary to those laws. How are we to explain the exemption of the 154 who failed to develop pulmonary consumption, and how are we to understand the hereditary transmission of an infection from the grandparents in twelve instances in which the parents escaped?

We no longer speak of the tuberculous diathesis, for we know that it does not exist any more than a typhoid diathesis or a variolous diathesis. Nor do we now speak of a pre-tuberculous stage of phthisis, for we know that patients presenting the symptoms formerly regarded as constituting that stage are in many instances already the subjects of a local tuberculosis, the signs of which have not yet made themselves manifest.

Individuals and families show remarkable variations in their susceptibility to infectious diseases. These variations are most striking in regard to the tuberculous diseases, and it must be admitted that the puny descendants of feeble, elderly or diseased parents, and especially of those who have suffered from tuberculous diseases, show deficient powers of resistance to morbid influences of all kinds and are, therefore, especially prone to tuberculosis.

But this is aside from the question. With certain variations in degree the susceptibility to the infectious diseases is almost universal. Upon favorable exposure to the infecting principle a large majority of individuals are liable to contract the continued fevers, the exanthemata, syphilis

[14] Lehrbuch der Pathologische Mykrologie, 1887.
[15] Berliner Klin. Woch., No. 15, April 15, 1889.
[16] Family Phthisis, 1884.
[17] Medico-Chirurgical Transactions, 1871.

and other infections. We do not on this account, however, permit ourselves to think of these diseases as being hereditary; nor do we in any way attach importance to the hereditary nature of the common predisposition to them. Our mode of thought in regard to these diseases, and especially in regard to the relation of the whole subject of preventive medicine to them, is unhampered by considerations of this kind. In regard to the tuberculous diseases, however, the doctrine of hereditary predisposition is a stumbling block constantly in the way. It impedes us at every turn. It prevents the general recognition of the simple fact that the tuberculous diseases are infectious, against which an efficient, organized and hopeful prophylaxis not only might be, but ought to be, generally carried into effect.

We may affirm that pulmonary consumption, subjected to the tests by which we determine the question in regard to the infectious diseases in general, does not appear to be hereditary in the ordinary sense, and that the congenital predisposition to the tuberculous diseases is much less general than to several other infectious diseases, notably the eruptive diseases of childhood.

2. IS PULMONARY CONSUMPTION CONTAGIOUS?

Those diseases are generally understood to be contagious in which an infecting principle, emanating from the body of the sick and gaining admittance to that of a healthy and susceptible individual, is capable of giving rise to the original disease. The mode of access from the sick to the well may be either direct or indirect, and varies with the different diseases. Thus, in syphilis we have a contagious disease communicable both by direct and indirect contact, and not otherwise; in enteric fever, a disease transmitted chiefly by contaminated drink or food; in typhus, measles and pertussis, by emanations from the body of the sick conveyed through the medium of the atmosphere.

Tuberculosis is communicable by all three methods. It was for a long time supposed that the direct communication of these diseases in the human subject by inoculation was exceedingly rare; but since 1883 a large number of unquestionable instances, of which the case of Gerber, above referred to, is an example, have been recorded. Many of these have been, like that of Gerber, due to post-mortem wounds. Others have occurred in washerwomen from the inoculation of the hands by infective matter contained in the handkerchiefs and clothing of tuberculous patients.

A number of cases have occurred during the performance of the rite of circumcision by individuals suffering from pulmonary phthisis.

It is hardly necessary to refer, in this connection, to the experimental inoculation of animals by pathological discharges containing tubercle bacilli, or by pure cultures.

There is no question at present that tuberculosis may be acquired by the use of infected food, the principal article being the milk of tuberculous cows, especially that of those suffering from tuberculosis of the udders and teats. Whilst the flesh of tuberculous animals, especially when properly cooked, is not liable to cause tuberculous diseases in those who partake of it, there is abundant proof of the fact that tuberculous sputum itself, either alone or mixed with other food, and tuberculous viscera, will give rise to tuberculosis in animals that eat them, either by chance or to whom they have been administered experimentally.

The primary infection by way of the intestinal tract, frequent as it is in childhood, is notably less common than infection by way of the respiratory surfaces.

It has for some time been suspected that the spread of pulmonary phthisis is largely due to the inhalation of particles of dried sputum, or other material containing tubercle bacilli or their spores, disseminated through the atmosphere. This suspicion, which long lacked the support of definite facts, is now fully confirmed. Cornet[18] has shown that dust collected from the walls of 147 different hospitals, insane asylums, private houses occupied by consumptives, and from crowded streets, contained in forty instances tubercle bacilli; in sixty-nine it was, however, free from them; and in the remainder, the death of the animals used in the experiments being quickly brought about by the action of other bacteria, the result was not conclusive. The dust from twenty-seven rooms not occupied by consumptives showed no tubercle bacilli. Even in the apartments of severe cases bacilli was not discovered, save in those instances where the patients expectorated into handkerchiefs or upon the floor; and in no case did the dust of the walls prove to be infectious where spitcups were habitually and exclusively used, although tubercle bacilli were abundant in the sputum.

Later investigations by Cornet[19] strongly support the conclusion that infection occurs chiefly through dried sputum floating in the atmosphere and drawn into the lungs by the inspired air.

The results of experimental studies in regard to the etiology of tuberculosis are opposed to the generally accepted view that the lungs are the seat of an especial predilection for the development of the tubercle bacillus. The preponderance of pulmonary consumption over other forms of tuberculosis is to be explained by the greater exposure of the organs of respiration to the infection.

The experiments of Naegeli and others show that air passing over a moist surface does not take up bacilli or spores. For this reason, Cornet con-

[18] Zeitschrift für Hygiene V. Band.
[19] Berliner Klin. Wochschr., 1889, Nos. 12, 13, 14, 15.

cludes that it is absolutely impossible for the air passages, tuberculous cavities, or the expectoration, so long as it remains moist, to render the expired air infectious. It must be admitted that under very exceptional circumstances the consumptive becomes dangerous by means of his moist expectoration, and the relation between the young infant and the consumptive mother or nurse affords peculiar opportunities for this means of communication. The writer has at present under observation an infant suffering from pulmonary and intestinal tuberculosis, developed at the age of 3 months, who was at that time taken care of by a phthisical nurse, who was in the habit of placing the nipple of the nursing-bottle in her mouth, to test the temperature of the milk before administering it to the child. The older sister of this child, its parents, and grandparents upon both sides, are living, absolutely free from the evidence of tuberculous disease of any kind, and in good general health. When, however, the expectorated matters become dried, they are capable of dissemination through the atmosphere in the form of fine dust bearing bacilli and spores. Dessication is a necessary requirement, and the most favorable conditions for such dissemination are found within doors. Wet weather and a moist atmosphere are unfavorable. The fact that the disease is most frequent in crowded quarters supports the view of the dissemination by means of the dried sputum.

Flick's[20] investigations in Philadelphia, which showed that 90 per cent. of infected houses had an infected house adjoining them, and that 33 per cent. of the infected houses supplied more than one case, warrant the conclusion that consumption is communicated by contact, by association, or by living in close proximity. This observer has pointed out the important fact that pulmonary phthisis conforms to the laws which govern the spread of contagious diseases in other respects. The grouping of the cases is the same, and the localization is influenced by the age of those predisposed to the disease. Consumption prevails in circumscribed epidemics, which, for the reason that the disease is of long duration, are less noticeable than epidemics of the ordinary contagious diseases which run their course rapidly. In a later article, Flick[21] has published investigations which shed much light upon the subject of house epidemics, and the persistence of the infection in houses.

Liebermeister[22] supports the view of the communication of the disease by the dissemination of dried sputum, and has observed many cases where previously healthy families became infected, one after another, after removal to a house formerly occupied by a tuberculous patient. From this point of view, the infection of several members of a household previously free from the disease, in the course of a few months or years after the introduction of a case, becomes intelligible. So also the development of the disease in married couples, and in those who nurse relatives suffering from it.

The high percentage of mortality from consumption in prisons, 30 to 40 per cent. of the total deaths, and in cloisters, often exceeding 50 per cent. among persons collected from all quarters, finds ready explanation in the doctrine of contagion.

Cornet[23] has shown by an elaborate analysis of statistical material supplied by the official records of the German Government that the opinion, very generally entertained, that nurses are not especially liable to tuberculous infection, is incorrect. The records investigated relate to thirty-eight cloisters, and extend over a period of twenty-five years. Among 2,099 deaths, almost two-thirds, namely, 1,320, or 62.88 per cent., were due to tuberculosis. He further shows that the general death-rate is remarkably increased among the nurse classes in the cloisters, and that the age of greatest mortality among nurses in general is very much earlier than in other occupations, namely, ranging from the twentieth to the fiftieth year of life, and that the principal agency in determining these results is the dominant prevalence of tuberculosis. The other infectious diseases, especially enteric fever, occupy a second place.

The enormous prevalence of tuberculous disease among monkeys, and other animals confined in zoological gardens, must be attributed to contagion. These animals are not subject to the tuberculous diseases in their wild state, and therefore bring into captivity no special hereditary predisposition, but simply a general liability to tuberculosis.

The researches of Cornet show that the distribution of the tubercle bacillus is by no means so wide as it was formerly thought to be. Koch has shown that, aside from artificial culture, it is capable of growth and multiplication only in the bodies of men and animals. The fact that it retains its vitality for an indeterminate, but for a long period of time outside of the body, is well recognized.

Developed in animal organisms, it is eliminated from them, and disseminated, only by means of the discharges containing it. It is ordinarily found, therefore, as Cornet has abundantly proved, only in the immediate neighborhood of tuberculous men and animals; and the development of morbid processes, which are due to it, and it alone, can be accounted for in no other manner than by its direct or indirect transmission from an infected to a healthy and susceptible animal organism.

To sum up, the tuberculous diseases respond

[20] The Contagiousness of Phthisis, Phila., 1888.
[21] The Times and Register, June 1, 1889.
[22] Deutsche Med. Wochschr., June 18, 1888.
[23] Zeitschrift für Hygiene, Band vi, 1889.

in every important particular to the tests by which we determine the contagiousness of the other infectious diseases. Tuberculosis is transmitted by inoculation, by direct contact, by means of food and drink ingested; finally, by means of the inspired air.

The more serious objections that have been urged against the view of the contagiousness of these diseases, and especially of pulmonary consumption, are due to the influence of the long prevalent view that they were manifestations of an hereditary diathesis; to the fact that until within a few years their infectious nature, now demonstrated, was unknown; and finally, to the immunity of a large proportion of individuals in communities where they are rife. This last objection loses much of its force in view of the definite facts recently brought to light in regard to the restriction of the tubercle bacillus to the neighborhood of infected individuals, and in regard to its mode of dissemination.

3. IS PULMONARY CONSUMPTION PREVENTABLE?

If pulmonary phthisis were hereditary in the ordinary sense, any hope of preventing it would be chimerical. If the views hitherto entertained in regard to the peculiar manner of its hereditary transmission can be shown to be correct, even the theoretical possibility of diminishing the extent of its prevalence would be beyond hope. What measures of prophylaxis could be exerted against the transmission and spread of an hereditary disease, capable of showing itself at any period of life, in individuals presenting from childhood all the appearances of health? or against a disease, not only liable to transmission to the third or fourth generation among those suffering from it, but liable to be transmitted through a generation or two entirely free from it?

The recognition of the infectious nature of tuberculosis deprives views of this kind of even the semblance of truth, while increasing knowledge of its pathology restricts the part played by heredity, in the transmission of the disease, to extremely narrow limits. As, however, the importance of heredity diminishes, that of contagion asserts itself more strongly in the face of cherished traditional beliefs and deeply rooted prejudices. In contagion alone can we find a consistent theory of the spread of the disease, and an intelligible explanation of the very facts to account for which the theory of heredity has been strained beyond reason.

The offspring of tuberculous parents, who are born manifestly tuberculous, die in a short period, and are not likely to communicate the disease. It has been asserted that children of tuberculous parents, born with latent tubercle bacilli, may suffer later in life from tuberculosis of the marrow, bones, and lymph glands. It is more probable that such persons have acquired the infection in infancy, and that its latency is due to a high degree of individual immunity. Even accepting the view of Baumgarten, this group of cases does not constitute a danger of the spread of tuberculosis so long as discharging lesions are absent. Direct inoculation, as in kissing, using the same handkerchief, and so on, is probably a rare accident, and is likely to become more so as its danger becomes more widely known. This, however, is especially a danger to the infant cared for by a tuberculous mother or nurse.

Direct inoculation by sexual approach in cases of genito-urinary tuberculosis is a theoretical danger not supported by recorded facts. The urine and fæces in cases of tuberculosis of the kidneys and bladder and of the intestines, are, owing to the disposition of such discharges and the scanty bacilli which they contain, not sources of danger. The same may be said in regard to the discharges from tuberculous sinuses. Inoculation, by way of superficial lesions of the skin, of the hands of washerwomen is an occasional occurrence. All these methods of communication are obvious and are easily preventable; they are of secondary, almost insignificant, account in the etiology of the disease.

The chief avenues of contagion are the digestive and respiratory tracts. Tuberculosis is acquired by infected food, and by the inhalation of air containing tubercle bacilli and spores. Communication by these methods is recognized only upon careful scientific demonstration. It is preventable only by concensus of opinion and concerted action in any given community. Individual effort is practically without effect. Notwithstanding the fact that in theory the spread of pulmonary phthisis is preventable, it remains to be seen to what extent it may be carried out in practice. Those will accomplish most in the work who most clearly realize the fact that in the tubercle bacillus we have the entity which constitutes the infecting principle. The rigid inspection of all cows in dairies and of all animals slaughtered for food, and the destruction of those found to be infected, would constitute the chief measure of prophylaxis as regards the infection by food. A second measure of much importance would be the systematic care of all milk until consumed, preventing all access of air or dust to it; and regulations against the employment of consumptives in dairies, meat shops, and other places where food is prepared and sold.

Measures of prophylaxis of this kind would come properly under the care of the Government, and uniformity and efficiency throughout the whole country could be secured only by the action of the General Government of the United States.

Reduced to its simplest form, the problem of prophylaxis against the spread of the tuberculous diseases among human beings consists in the

proper care of the fresh expectoration of consumptives. Not dangerous when moist, it becomes, when dried, a fruitful—in fact, the chief means of the spread of the disease from the lesions of which alone it is derived. The sputum of those suffering from pulmonary phthisis should under all circumstances be collected in suitable vessels, and kept in a moist condition, until it is either destroyed by fire or discharged into sewers under such conditions as will insure its conveyance to places where it is not likely to become a source of danger. Spitting upon the floor or in the street, or into handkerchiefs or towels should in all instances be avoided. Patients should be required not only to use in their rooms and in the house a suitable cuspidor, but to carry with them pocket spitcups in which to collect the discharge.

A cup has recently been devised, and is sold in the shops in this country, which consists of a small metal frame in which a folded paper cup is set. When a quantity of sputum has accumulated, the paper can be removed and burnt with its contents. Detweiler[24] has designed a pocket spitcup or flask to meet the uses of consumptives. It is of glass, flat in shape, with metal fittings tightly closing.

Want of space stands in the way of an extended discussion of the details of the prophylaxis, the object of this paper being simply to indicate the general principles upon which it is to be based. The subject has, however, since the publication of Cornet's important communications, attracted widespread attention. A series of regulations have been issued by the President of the Police Board in Berlin,[25] and a report, embodying the general facts bearing upon the matter, and a practical set of rules, drawn up by Prudden, Biggs, and H. P. Loomis, Pathologists of the New York City Health Department, has been transmitted to the Board of Health of New York.[26]

These gentlemen refer to a fact which may act as a motive to consumptives not otherwise inclined to follow out obvious measures of prophylaxis. The fact is expressed in the following terms: "An individual, who is well on the road to recovery, may, by self-inoculation, if he do not with the greatest care destroy his sputum, diminish greatly his chances of recovery."

The early recognition and treatment of pulmonary consumption constitutes in itself an important measure of prophylaxis as tending to circumscribe or retard the extension of the lesions and thereby diminishing the amount of expectoration. In this connection it is necessary to allude to the importance of communicating to the patient the true nature of his disease at an early date. Much is to be gained, not only on the part of the patient, but also on the part of the public, by the disuse of the conventional euphuisms, "slight bronchitis," "local trouble," etc., by which it has been customary to conceal as long as possible from the patient and his friends the true nature of his complaint. As the question stands to-day, the ease of diagnosis, the hope of cure in a considerable proportion of the cases, and the necessity of individual and general efforts of prophylaxis render such a course imperative. Nor need the knowledge of the nature of his trouble bring dismay to the patient nor demoralization to his household. He should be made to understand from the beginning that, though a source of danger to his friends, he is only a source of danger in proportion as he neglects the precautionary measures by which danger may be effectually averted.

It is not to be hoped that even the widespread recognition of the mode of communication of tuberculous consumption and the means by which its spread may be prevented will be followed by any very rapid diminution in the prevalence of the disease. We have seen in late years the beneficent results of antisepsis in the diminution of surgical infections and puerperal diseases. The hope that the frightful prevalence of pulmonary phthisis may in the near future be restricted is no longer the vain dream of the visionary; that hope now rests upon a scientific basis, and its realization constitutes to-day the most serious practical problem of preventive medicine.

DR. STOCKTON took issue on one point, *i. e.*, diathesis. He had observed a single case of tuberculosis occurring in an orphan asylum, in which no other child was ill. Why should this child be the subject of an attack? There must have been some lack of resistance. It seems so evident that there is something besides mere contagion that the cause may be classed, 1, contagiousness; 2, non-resisting soil.

DR. SOLLY thought he had seen in Colorado strong evidences of the contagious character of tuberculosis. He found it occurring in all individuals, and that it would attack any one upon the slightest exciting cause.

DR. HERRICK thought that the question ought not to be accepted absolutely as it is by the profession. There still seem a large number of facts inexplicable. It may be due to mental deficiency on his part, but it will require a great deal of additional proof to make him believe that the disease is contagious. Has it stood the test of therapeutics—have we made any advance in discovering a specific antidote for any disease?

DR. S. SOLIS-COHEN said that the last speaker need not fear being accused of mental deficiency so long as the greatest medical mind of the century, Dr. B. W. Richardson, of London, occupied the same position of wholesome skepticism. It would be a mistake to assume that the infective action of microbic parasites is the sole cause of

[24] Therap. Monatshefte, May, 1889.
[25] Medical News, May 25, 1889.
[26] Medical Times, June 8, 1889.

consumption. There are other parasites—the entozoa, which, descending from non-parasitic organisms, have through the circumstances attending their evolution taken upon themselves the parasitic cycle. As Dr. Vaughan's investigations proceed in the one direction to determine in what way bacteria are toxic, so we may look in the other direction to see which preceded chronologically, the microörganism or the disease, alike in the life of the individual and in that of the race. May we not conceive that their evolutionary history is like that of the entozoa—that, originally innocuous, they found in the degenerated tissues of disease a favorable environment, and thus took up their parasitic cycle, gaining perhaps a certain power of carrying infection. I do not deny their infective power, but I do submit that the evidence of their sole power of originating disease is not conclusive. The evidence as to consumption seems to me to indicate an hereditary diathesis, an heridítary failure of nutrition, and that upon this bacillary tuberculosis becomes engrafted as an epiphenomenon.

Dr. John A. Cutter said: Till bacteriology cures consumption, it cannot take the first place. In the Transactions of this Association for 1880 is an article by my distinguished father, Dr. E. Cutter. In it are given the records of seventy cases of consumption, twenty-six of which are cures. This paper was based on twenty-four years of practice.

Koch's bacillus was known to be associated with vinegar yeast thirty years ago by cryptogamic botanists. It is found in lager beer drips, bread, etc. In blood it is found with the spores of vinegar yeast, which by their size and chemical action produce tubercle. This statement is based on the examination of healthy and diseased people's blood. To be more concrete: A young woman whose father and sister had died of tuberculosis and whose uncle had been cured of this same disease sent us some sputum two years ago, and in it were found elastic and inelastic lung fibre. We wrote her that her lungs were breaking down, and that she was curable. She went on treatment and has had many ups and downs due to adverse circumstances, but one month ago, her family physician examined her and said "he must succumb to the fact" that "her lung was healed." I am treating cases of consumption right along; I believe they can be cured and do see them cured. I am thankful for all bacteriology has done, but it is young, it does not cure its cases, and as a term it does not cover the ground of blood morphology.

In tuberculosis, the blood has the morphology of sticky, ropy masses of red corpuscles, enlarged fibrin filaments, distended white corpuscles with spores of vinegar yeast, and in the serum are to be seen the same vinegar yeast spores, free and in masses. These masses of vinegar yeast, when detained by the lungs, form by their chemical mechanical action tubercle. This yeast comes from the bowels, and is produced there by the fermentation of starches and sugar.

The treatment aims to stop the fermentation by the feeding of non-fermentative foods and proper medication. The patient is watched by studying the blood, urine and fæces. So long as there are any masses of vinegar yeast in the blood, so long is the patient in danger of lung necrosis. When the blood has become healthy, then nature has a chance to attach the lung and heal it, and it has been our experience that by incessant, ceaseless watching, by most careful diet and medication, even cases with cavities have been cured and are alive to-day.

The greatest value of the study of the blood morphology in consumption is the ability to find positively the spores of vinegar yeast in the blood before there is any cough. Lastly, in cases of great destruction of lung tissue and when death is imminent, the amount of vinegar yeast in the blood is the greatest, some of the masses nearly covering the whole field.

Dr. Wilson, in conclusion, remarked that in reference to Dr. Stockton's remarks he would say that there are cases as incapable of explanation as a single case of typhoid in one locality. The tubercular nature of the disease has been determined. The fact that the view is not favored in all quarters should not stand in the way of its acceptance. Those who do reject the doctrine have none to offer in its place.

MORBID PERFORATIONS OF THE NASAL SEPTUM.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY A. B. THRASHER, A.M., M.D.,
OF CINCINNATI, O.,
PROFESSOR OF LARYNGOLOGY IN CINCINNATI POLYCLINIC.

Nearly two years ago my special attention was directed to morbid perforations of the septum narium by meeting with a case in a friend and patient of my own. I had grown to regard nearly all such perforations as of syphilitic origin, but in this case I knew that syphilis did not exist as an etiological factor.

I now give a brief history, bearing on this point, of the cases which have since fallen under my observation in my private practice. My cases at the Cincinnati Polyclinic bear in the same general direction, but I desire more time with these to verify my points before offering my conclusions to the profession. I have endeavored to eliminate from these histories everything which does not in a manner bear upon the etiology of the disease. Through negligence I have at times

failed to record all data, but where there is a doubt as to a fact I leave it unrecorded.

Case 1.—Miss D., æt. 14. Family history renders syphilis probable; has always had delicate health and much throat and nose trouble. Consulted me for aphonia, due to ulceration of vocal bands. Half of epiglottis eaten away by a sloughing ulcer. Large cicatrices over posterior pharyngeal wall, which by contraction had drawn the velum much out of place. Has had pain in the nose, and about one year ago noticed a slight falling of the bridge of the nose. Now has a perforation of septum the size of a silver quarter, embracing cartilage and bone. Both lower turbinates absent.

Treatment local and antisyphilitic.

Case 2.—Mrs. L., æt. 28. Family history good, previous health good; married for two years; had miscarriage eighteen months ago, at two months, from unknown cause; gave birth to a healthy child four months ago.

Was under my treatment for acute follicular tonsillitis one year ago, at which time the septum was intact. Three months ago had pain in nose, more especially about the bridge, with occasional attacks of epistaxis. Her general health at that time was bad, as she made a "bad recovery" from child-bed. She is now feeling better, but has much pain in nose and an offensive purulent discharge from both nares.

Examination revealed a ragged perforation of septum one-half inch in diameter, with necrosis of left lower turbinate. The perforation involved the anterior border of vomer, apparently having begun at the junction of the bone and triangular cartilage.

The family physician, a gentleman of education and large experience, assured me that there was no suspicion of syphilis on either side of the family. The child is perfectly healthy and has never exhibited any symptoms of syphilis. However, to give the patient the benefit of the doubt she was put on constitutional as well as local treatment, and in two months she was about well.

Case 3.—Miss S., æt. 26, a lady of excellent reputation and no family or antecedent trouble pointing toward syphilis. She consulted me for acute follicular tonsillitis. In making my routine examination of nose I discovered a perforation of the cartilaginous septum of the size of a silver dime. The opening had smoothly cicatrized edges except a slight ulceration under a crust adhering to the upper border for one-quarter of an inch. There was a history of occasional "colds in the head," with some mild attacks of epistaxis but no pain in this region. The patient had no previous knowledge of the perforation. The slight ulcer healed rapidly under local treatment.

Case 4.—Mrs. McK., æt. 46. Has two healthy living children, the youngest 12 years of age, and never had a miscarriage. Has had nasal catarrh for years, with frequent and distressing bleeding from nose. Never had any sores in mouth or throat, or any skin symptom.

Family doctor says no syphilis on either side of the family. Consulted me for hypertrophic rhinitis. Examination revealed a small perforation, one-third of an inch in diameter, of cartilaginous septum. The upper posterior quarter of opening was ulcerating. The ulcer healed slowly under local treatment alone.

Case 5.—Mr. H., æt. 28, married; one healthy child 2 years old. Wife has had no miscarriages. Has never had syphilis, "although would not hesitate to tell me, if true." Has been troubled for two or three years with a crust forming over the septum, which he had been accustomed to remove by picking with his finger-nail. The removal in this manner was occasionally followed by slight hæmorrhage. There was now a perforation as large as a goose quill of the cartilaginous septum, the posterior edge of which was slightly ulcerated, the ulcer being covered with a dry crust. There was no pain felt at any time in this region. The ulcer healed rapidly under local treatment.

Case 6.—Mr. S., æt. 27, single. General health good; no history of syphilis, or any of its symptoms. For a year has had crust formations over left side of septum, which he has been in the habit of picking off with his finger-nail. Pain has never been a feature of the case. Examination revealed a dry brown crust on the cartilaginous septum. The removal of this crust disclosed an ulcerating surface half an inch in diameter, sloping in gradually from the circumference until the centre had penetrated two-thirds through the cartilage. The ulcer healed slowly, and in three months cicatricial tissue covered the depression made by the eroding ulcer. The treatment was simply local.

Case 7.—Mr. H., æt. 31, married; two children, both healthy; never had syphilis. Consulted me for hypertrophic rhinitis. On examining the nose I discovered a perforation one-third of an inch in diameter of the cartilaginous septum, which he thought he had caused by picking the nose too much. There was no ulceration at the time, nor during the two following months, when he was under treatment for the hypertrophied turbinates. There had never been any pain in connection with the case.

Case 8.—Mr. S., æt. 26, single; family history tubercular. Six years ago had several chancres which he called syphilis. Took medicine for three months and has never had any other symptoms of this disease. Has had occasional attacks of epistaxis for years and crust formations in nose, which he had involuntarily removed with his finger-nail. Examination revealed a small perforating ulcer of cartilaginous septum. There had never been any pain connected with the ul-

ceration. The ulcer rapidly cicatrized under local treatment.

Case 9.—Mr. McC., æt. 46, married, with three healthy children; family history good; general health perfect; no probability of syphilis. Consulted me for irritation of throat of short standing. Has had occasional brief attacks of bleeding from nose. Examination revealed a ragged perforation half an inch in diameter of cartilaginous septum. He had no idea that there was the least nasal difficulty. The ulcer healed kindly under local treatment.

Case 10.—Mr. K., æt. 44, married and has four healthy children; family history good; never had syphilis or any symptom; was flour inspector by profession, which necessitated snuffing all grades of flour. Consulted me for laryngitis and cough. Examination revealed an opening half an inch in diameter through the cartilaginous septum, with one-quarter of the circumference still ulcerating and covered with brownish crusts. Did not know anything was the matter with nose. The ulceration healed kindly under local treatment.

Case 11.—Mr. P., æt. 50. Consulted me for an acute pharyngitis. I then discovered a small perforation of triangular cartilage of septum, which he claimed had been present "for years." There was no indication or history of hereditary or acquired syphilis. The perforation had never given rise to any trouble.

Case 12.—Mrs. H., æt. 40, widow; one healthy child; no miscarriage. Consulted me for follicular tonsillitis. Routine examination of nose revealed a small perforation of septal cartilage, which she affirms that she distinctly remembers was present when a child "under ten years old." She remembers to have examined other children at that time to see whether there was a like condition. No history or evidence of syphilis. It has never created trouble.

Case 13.—Mrs. J., æt. 30; suffering now from constitutional syphilis; has necrosis of bone and cartilage of septum, with destruction of right inferior turbinate; has severe pain over bridge of nose and frontal sinus. Put on constitutional and local treatment.

Case 14.—Mr. W., æt. 31, married; two healthy children; never had syphilis; has been troubled with formation of crusts on septum ever since a youth; has always removed this crust with finger nail; has had no pain, but occasional slight hæmorrhages. Several years ago, while removing this crust as usual, was much surprised and frightened by pushing his nail entirely through the septum, since which time the perforation has slightly increased in size. It has not perceptibly enlarged for three or four years. The slight ulceration at the edge healed rapidly under local treatment, but occasionally he drops into my office with a recurrence.

Case 15.—Miss C., æt. 15; family history good; no suspicion of syphilis. Consulted me for acute follicular tonsillitis. Examination of nose revealed a small perforation of cartilage of septum, of the existence of which she was ignorant. The edges were cicatrized, and of course the condition had occasioned no trouble.

Local treatment in these cases consisted in, (*a*) when necessary, cleansing the surface of all secretions and crusts; (*b*) cauterizing the ulcer with a 25 per cent. solution of argentum nitras, chromic acid, trichloracetic acid, or the galvano-cautery, and (*c*) the application of a mild disinfectant, as Seely's yellow oxide of mercury ointment, 1 per cent. of resorcin in vaseline, or 5 per cent. of white extract of pinus canadensis and 1 per cent. of carbolic acid in vaseline. When there was present necrosed bone, this was carefully removed with forceps and curette. The constitutional treatment was addressed to the supposed underlying dyscrasia.

From an analysis of these cases it will be seen at a glance that three were unquestionably syphilitic; eleven were probably non-syphilitic, and I have placed cases 2 and 8 in the doubtful column. In case 2 the lady's husband was a commercial traveler, and thus might have contracted the disease and conveyed it to his wife without the knowledge of the family physician. The fact that her child is healthy and that she has no other manifestation of the disease speaks strongly against the syphilitic theory. In case 8 there was a history of several small sores, pronounced by a doctor to be syphilitic, a month's constitutional treatment per os, and no subsequent symptoms. The multiple character of the lesion, together with the absence of any following suspicious symptoms, would point toward a soft sore rather than to a Hunterian chancre. However, I place this with case 8 in the doubtful list.

In the three syphilitic cases the perforation involved the osseous as well as the cartilaginous part of the septum; indeed, it is probable that the periosteum was attacked simultaneously, or nearly so, with the soft tissues. In case No. 2, doubtful, were present exactly the same conditions. In each of these four cases one or the other of the turbinated bones had become affected and pain in the bridge of the nose was observed, which symptom was absent in all the other cases. While no pain at all was felt in twelve of the cases, it is well to remark that in no case was there pain in the ulcerated area of the septum. The application of the cautery gave rise to no feeling of pain, showing a well developed localized anæsthesia. In this respect the ulcer might be called lupoid, but the other characteristics of lupus were wanting.

It is true that the number of cases is hardly large enough to give much value to deductions therefrom; yet this is a full report of all private cases of this character coming to my office for

over twelve months. In these fifteen cases which I have the honor to report the following facts will be easily recognized:

First.—A large majority of these cases of perforation of the septum were non-syphilitic.

Second.—The majority of the cases were giving rise to no trouble, and needed but simple local treatment.

Third.—The prognosis in every case was favorable with treatment; in the majority of cases, favorable without treatment.

Dr. Carl Seiler, of Philadelphia: I am in full accord with Dr. Thrasher in saying that perforation of the septum is not by any means a symptom of syphilis, but is most frequently caused by either scratching or by the action of chromic acid introduced into the nasal chamber, either in chromate of potash factories, or more frequently by physicians as a means of reducing anterior hypertrophies.

CLINICAL OBSERVATIONS ON SOME CASES OF A PECULIAR CHARACTER.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CARL SEILER, M.D.,
OF PHILADELPHIA.

For over three years past I have observed a large number of cases which exhibited unusual symptoms, both at the commencement of the disease and during its course, and, as the disease finds its expression as far as I have observed it, mostly in the upper air passages, I may be pardoned for bringing the consideration of this new disease or this unusual variety of an old disease before the Section, although it belongs perhaps more properly before the Section on General Medicine. I must also apologize for the delay in reporting my observations, which delay was caused first by the fact that at the last meeting of the American Medical Association I learned that my esteemed friend Dr. W. C. Glasgow had made similar observations and was preparing a paper on the subject, and that I did not want to anticipate him; and second, I was desirous of getting a better insight into the nature of the disease by further observations. My friend has, however, up to the date of writing disappointed us, for no paper by him on his observations has appeared as far as I am aware, and I feel that I have collected sufficient data to warrant me in calling the attention of the profession to this very prevalent and peculiar disease in a more detailed manner than I did a few months ago in a short verbal communication to the Philadelphia German Medical Society, and in the third edition of my "Handbook on the Diseases of the Throat and Nose." I will not presume to give a name to this apparently new disorder, nor can I give any reasonable etiology to account for its epidemic appearance among all classes of a community and for its widespread geographphical distribution; all I can do is to describe the symptoms as I have observed them in many cases and the result of the treatment instituted to combat them. The symptoms exhibited by, what I consider to be, a typical case of the disorder, are as follows:

The patient, apparently in perfect health, is suddenly attacked by a severe pain of a neuralgic character, most commonly in the back, shooting upward toward the neck and apparently through the trunk to the chest; less frequently this pain is described as a severe otalgia, or it takes the form of severe pain in the arms or legs. Only in very few cases the patient stated that he had had a chill. This pain usually lasts from six to twenty-four hours and then disappears, although I have seen one or two cases where the pain lasted for weeks. During this period of pain no rise in temperature and no acceleration of the pulse is observed, but the patient complains of extreme weakness.

The next symptom complained of, in the majority of cases which I have seen, is a sore throat, which on inspection shows the mucous membrane of the pharynx, velum palati and pillars to be swollen and of a yellowish red hue with here and there streaks of the lighter color. The tonsils appear enlarged and often covered with patches of a thin white film, which closely adhere to the mucous membrane and may remain unchanged for days and even weeks. There is none of the intense redness of the mucous membrane which is seen in the ordinary acute pharyngitis and tonsillitis, and in diphtheritic or croupous inflammation. An incision into the apparently œdematous swelling of the mucous membrane yields no serum but a straw colored tenacious mucoid material which can be drawn out in threads of considerable length. In a few cases I have seen similar swelling and patches of pseudo membrane extending to the larynx, and in one case the only part affected was the subglottic cavity. I have also seen these lesions in the nasopharynx and in the anterior nasal cavities. A removal of the pseudo membranous patches discloses no ulcerated surface beneath, but may cause a slight bleeding of the spot thus denuded. They are at first quite thick and remain for a long time (in one case seven weeks) but become gradually thinner, until at last they greatly resemble a mucous patch on the mucous membrane. They never become discolored nor turn up at the edges and are never spontaneously dislodged and thrown off. An incision does not decrease the swelling of the mucous membrane.

The patient complains usually of but compara-

tively little pain in the throat and deglutition is not as difficult and painful as might be supposed, nor is the dyspnœa in the laryngeal cases, which I have seen, very pronounced, yet there is an anxious expression of countenance as of impending evil and a dulness of the eyes quite characteristic. In many other cases the mucous membrane of the upper air passages is, however, not affected, and the focus of disturbance seems to be located in the alimentary canal or in the mucous membrane of the bronchial tubes. In the first instances symptoms of gastric intestinal catarrh show themselves which often closely resemble typhoid fever. As a specialist I have seen but few cases of the latter class, but Dr. Glasgow, of St. Louis, has seen quite a large number of the abdominal form, and Dr. L. M. Hildreth, of Lyons, Nebraska, in a letter on the subject states that in about 50 per cent. of the cases observed by him (nearly 200) the mucous membrane of the upper air passages was the focus while in the other cases no signs of tonsillitis or pharyngitis were present.

Together with the appearance of the lesions in the mucous membranes a rise in temperature is noticed which not infrequently runs up to 104° while the pulse is but slightly accelerated rarely going above 100. The diurnal exacerbations of temperature occur usually in the middle of the day and night and the fluctuations between the highest and the lowest temperature are very slight, usually not more than one degree. Together with the febrile symptoms loss of appetite is noticed, and the bowels usually become constipated. The back of the tongue is furred with a yellowish fur, but remains moist and the tip and edges are usually clear. The debility increases from day to day until in the severer cases the patient is so weak that he cannot turn over in bed or move his arms.

At the same time, that is about the third or fourth day from the onset of the disease, the glands nearest the seat of the focus of irritation become involved, so that in the pharyngeal form the submaxillary and parotid glands are swollen and hard, and gradually the whole chain of lymphatic glands down the neck become involved.

In some cases suppuration of some of these glands ensues.

I have not been able to observe any definite duration of these symptoms, as they gradually disappear at different intervals of time from the onset of the disorder in different cases, but the tendency is toward a recurrence and an indefinite duration of the weakness of the muscular system. In a few cases of the abdominal form I have noticed a continuance of the rise in the temperature after all other symptoms had disappeared and the pulse rate had returned to its normal standard.

Convalescence is usually very slow, the patient gaining in strength only very gradually, and it often requires many months before his health and vigor are completely restored. The tendency of the disorder is toward recovery or a chronic continuance of some of the symptoms rather than toward a fatal termination, although I have met with two cases of death in about five hundred cases, and Dr. Glasgow has met with a greater number. He was fortunate enough to be able to get post-mortem examinations in some of the fatal cases at the St. Louis Hospital, and found that the only lesion which he could discover was numerous ecchymoses on the surface of the intestinal mucous membrane and no sign of ulceration or enlargement of Peyer's patches. In the two cases which died under my observation I could not obtain the consent of the family to make a post-mortem examination, but the immediate cause of death, to judge from the symptoms immediately preceding the fatal termination, was heart failure. Careful examination of the urine in a large number of cases showed no trace of albumen nor any abnormal condition of the fluid, indicating that the kidneys are not affected. In no case have I observed any sign of paralysis following the pseudo membranous exudation upon the mucous membrane of the tonsils, pharynx or larynx.

I have observed, however, numerous cases of what seems to be a chronic form of the disorder, which exhibited symptoms slightly different from the acute form, inasmuch as there is no swelling of the mucous membrane, nor are there any patches of pseudo membrane, but there is a peculiar yellowish red hue visible particularly on the velum, pillars and posterior wall of the pharynx. The most prominent symptom is extreme weakness and lassitude, together with a slight elevation of temperature and a tendency to neuralgic pains after even the slightest exposure to cold or draughts of cold air. In these cases in which there is a tendency toward relaxation of the nasal turbinated tissue, occlusion of the nasal breathing channels occurs after the slightest mental or physical exertion. Constipation alternates at irregular intervals with slight diarrhœa, and somnolency with insomnia. A very peculiar feature is that in these chronic cases which may have lasted for months, we may see an outbreak of the acute form, with all the symptoms described before. Dr. Bermann, of Washington, has observed two such cases of this recurrence of the acute disorder after several months duration of the chronic form.

As far as I have been able to learn by private information and correspondence with medical friends, the disorder has been observed in every portion of the United States from Maine to Washington Territory, and as far south as New Orleans, and it is not more than three years since it was first observed.

The etiology of this disese, which seems to be un-

doubtedly epidemic, because of the large number of cases observed by individual observers in different localities during a short space of time, is as yet unexplained, and owing to the failure of obtaining any definite results from culture experiments, at least in Philadelphia, I will not venture to express an opinion, except that I am convinced by clinical experience that it is infectious but not contagious.

In regard to the treatment of these cases, very little is to be said. My experience has been that all the drugs usually prescribed in cases similar in nature, together with topical medication are useless or even worse. Quinine, digitalis, aconite, antipyrin, salycilic acid, iron, chlorate of potash, etc., all have either no effect or increase the discomfort of the patient. The only drug which I have used for the last year at the suggestion of Dr. Glasgow, is benzoate of soda, and it has proved in my hands almost a specific for the disorder. Five grains of the benzoate of soda, given every hour, with a tablespoonful of whiskey or brandy every four hours, and absolute rest, will, as far as my personal experience goes, break up an attack of this disorder within forty-eight hours from the onset and restore the patient to perfect health, while in the chronic cases the patient rapidly improves under such treatment. As the benzoate of soda in often repeated doses has of late been recommended by some German writers as a specific for diphtheria, it is possible that this disorder exists also across the ocean, and has there as well as here been mistaken for diphtheria, for in several cases of undoubted diphtheria under my observation the drug was of absolutely no avail.

To sum up, the symptoms of the cases observed by me have been :

1. Neuralgic pains, usually in the back and chest, and often in the head, ears, and limbs.

2. Extreme debility.

3. Mucoid infiltration of the submucous tissue and the formation of thin white pseudo membranous patches on the surface of the mucous membrane.

4. Absence of febrile symptoms at first, and later high temperature and relatively low pulse rate.

5. Absence of albumen in the urine and liability of heart failure.

6. Gradual melting away of the pseudo membranes and the absence of any odor from them.

7. The wide geographical distribution in this country, and the infectious but not contagious nature of the disorder.

8. And, finally, the specific action of benzoate of soda in relieving all symptoms promptly.

Since writing the above, I have learned that Dr. Glasgow has read an exhaustive paper on his observations at the late meeting of the American Laryngological Association in Washington. But as I was unfortunately prevented from being present at that meeting, I am not able to quote from it and am obliged to let this paper stand as the record of independent observations on my part.

DR. THRASHER said he had seen a number of cases which he had not at the time named, which presented symptoms somewhat resembling the cases reported by Dr. Seiler. He was rather of the opinion that he had had to do with a complication or combination of diseases, or even with several entirely different diseases rather than with one uncomplicated affection. Diphtheric poison has at times lodged in the tonsillar lacunæ and remained dormant for a long time. Scarlatina is at times so disguised as to present some such symptoms. He thus thought that after a time, this disease might be separated with two or more distinct affections. Dr. T. had in a few of his cases used salol with apparently good effect.

REPORT OF A CASE OF ECTOPIC GESTATION TREATED WITH GALVANISM.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY WM. H. TAYLOR, M.D.,
OF CINCINNATI, OHIO.

The great practical importance of extra-uterine pregnancy, and the prominence it now has as a topic for discussion, justify the belief that any contribution, however humble, will be of interest. But, in asking your attention to the details of a case with the above title, it is with the hope that I may elicit information from you, rather than with the thought of imparting knowledge to such a company as now honor me with their attention. I am fully impressed with the fact that the diagnosis of ectopic gestation is difficult, and therefore the first essential interest centres about this point. And, since the experience of one man is not likely to be sufficient to allow him to make dogmatic assertion, I shall preface the report of my case with brief extracts from the latest published utterances upon this subject.

T. Gaillard Thomas, in the "American System of Gynecology," says: "The most reliable rational signs (of ectopic pregnancy) are these, engrafting themselves upon the ordinary signs of a normal pregnancy.

"1. Sanguineous flow of greater or less persistency.

"2. Occasional gushes of blood occurring without assignable cause and disappearing without treatment.

"3. Iliac pain, sometimes extending down the thighs.

"4. Paroxysmal pelvic pain.

"5. Symptoms of abortion attended with expulsion of pieces of decidua, without expulsion of a fœtus.

"6. Recurrent pelvic inflammation suddenly recurring.

"7. As the fourth month is reached symptoms of pressure, as if from a retroverted gravid uterus, frequent micturition, etc.

"If, in a pregnant woman who presents in her symptoms the peculiarities just mentioned, there be discovered in the pelvis a mass of ovoid shape on one side of or behind the uterus, which is slightly movable and tender upon pressure, and which obscurely gives the impression that it contains fluid, the probabilities are very great that ectopic gestation exists. . . . If the passage of an interrupted galvanic current of twenty cells produces, within forty-eight hours, a flaccidity of the mass, a general improvement in symptoms, and a sudden arrest of the progressive signs of pregnancy, this probability becomes as much a certainty as diagnosis often is in cases of disease attended by some obscurity."

Dr. Joseph Price, at the recent meeting of the American Association of Obstetricians and Gynecologists, said the symptoms are:

"First, partial or complete cessation of menstruation for one or more periods, generally accompanied by other rational symptoms of pregnancy, though occasionally these are all wanting.

"Second, pain which is peculiar, being generally severe, paroxysmal and long continued. . . . These pains are apt to subside for a time only to recur.

"Third, the appearance of uterine hæmorrhage, which is again peculiar in that it is usually irregular, both as to time and quantity, ... and containing shreds of tissue which are portions of the decidua vera."

Greig Smith closely concurs with the views just expressed, and John Strahan, M.D., to whom has just been awarded the Jenks prize for an essay on the subject of extra-uterine pregnancy, says: "A rounded, elastic, semi-fluctuant, tender tumor behind and to one side of a slightly enlarged and laterally displaced uterus, if found to be rapidly increasing under circumstances which permit the possibility of extra-uterine pregnancy, could hardly be mistaken for anything else. . . . If in a week or two the extra-uterine swelling had increased considerably, and shreds of decidual membrane had come away with the metrorrhagia, the case for tubal gestation would be all but complete. . . . If we happened to have most of the symptoms of even early pregnancy present, and a vascular, growing, semi-fluctuating tumor at the back or side of an enlarged uterus, with suspension of the menses for a time or two, and then irregular hæmorrhages, with severe crampy pain, the diagnosis would be evident to the simplest."

Having thus called to mind the important data of an early period of ectopic gestation, allow me to place my case in comparison therewith, that you may be able to compare the grounds upon which my diagnosis was based.

The case which I submit as a text for discussion came under my care in January last, with history as follows: Mrs. W. has borne three children, the last two and a half years ago, since which time menstruation has been normal until recently, and she has been in good health. She menstruated in September, and the period which should have commenced October 18 was missed altogether. The patient noticed abnormal desires for food which led her to suspect pregnancy. October 30 she had a slight discharge of mucus tinged with blood, which continued at intervals till November 15, the amount and character varying; when the flow was slight it was dark and offensive. For about two weeks she grew better and attended to her household duties, but Nov. 29, without obvious cause, she was seized with intense pain in the lower part of the abdomen, which compelled her to remain unmoved in a semi-flexed position till carried to her bed. She vomited violently; she had intermittent pain (supposed to be uterine), with a free flow of blood. The phenomena of shock were so marked that for twelve hours death seemed imminent. Her physician, Archibald Crary, M.D., of Hartford, W. Va., wrote that, although an abortion was expected, the os uteri was not dilated. Her highest temperature was 99°. In four days she was much improved in all respects, and the flow of blood had ceased. December 13 she discharged what she says her physicians called fœtal membranes, since which time she has lost no blood.

December 20 she had a second attack of violent pain, not so severe or protracted as the first, with no flow of blood. Since the beginning of her trouble she has been subject to brief severe pains in the left iliac region, produced by any exertion.

Her physician wrote to me that he suspected extra-uterine pregnancy. I saw her first January 3, 1889. She was spare, seemed mentally and physically depressed, thought she had lost some flesh, though she was positive the upper part of the abdomen was growing larger. She had no mammary signs of pregnancy, though perversion of appetite continued. Abdomen tender to touch, pain increased by deep pressure, no tumor detected by palpation, auscultation negative; by vaginal examination uterus deflected to left, os patulous, apparently not much enlarged, but since introduction of sound caused great complaint of pain, the cavity was not well explored. To the right of uterus and apparently loosely connected with it was a firm, irregularly oval mass, the size of the folded hand; the mass was slightly movable and not very tender. From the

history given me this tumor had grown during the past few weeks; complained of feeling of pressure on rectum.

During the ensuing two weeks the continuous current was applied six times by means of ball electrode in vagina, and twice with sponge on surface of abdomen. But, since vesication occurred, a large wire gauze was substituted. From eight to twenty cells of Waite & Bartlett's battery were used, and, under anæsthesia, the current was carried to 125 milliampères. A very remarkable effect mentioned by the patient was that from the commencement of her sickness her extremities had constantly been cold and clammy, but from the first application of the battery they had grown warm.

She left the city January 19, at which time her general health was much improved and her normal appetite had returned.

February 25. The tumor has decreased, is not painful. Uterus somewhat retroverted.

April 11. She has gained in weight, has no pain, menstruation is as well as before her trouble began.

Mr. President, having thus placed before you the facts, I am not inclined to weary you with deductions. You are well aware of the diversity of opinion that exists as to the relative value of electricity and laparotomy in the early treatment of ectopic gestation. Granting the correctness of the diagnosis, I feel warranted in claiming success by the former treatment in my case.

TOPICAL TREATMENT OF DIPHTHERIA AND CHEMICAL SOLUTION OF THE MEMBRANE.—SUBSULPHATE OF IRON AND SALICYLIC ACID.

BY A. W. NELSON, M.D.,
OF NEW LONDON, CONN.

The *New York Medical Journal*, January, 1874, published "Forty Cases of Diphtheria Treated by Local Application of Sulphate of Iron." The present writer in that paper says: "About 1865 I became confident that some local treatment would best cure the disease, and often wondered what chemical re-agent would destroy and counteract the source of fever, the putrid mucus, pseudo-membrane, continuously exuding, and at the same time not cauterize and irritate the still living, although infiltrated, membrane of the throat. Creosote suggested itself to be considered (this was just before the carbolic acid discovery or invention), but it was not tested. Another agent, the subsulphate of iron, Monsel's styptic, in some now forgotten way was brought to notice. My first application to the throat in diphtheria determined with me its efficiency, etc. . . . "You will sometimes induce a little vomiting at first, an effect not injurious—on the contrary, possibly beneficial in ridding the stomach of poisonous mucus swallowed before, etc."

The tincture of chloride of iron has usually been given, 3 to 10 drops in a *little* water, with the local application of the subsulphate, and this line of general treatment has undoubtedly largely prevailed, in this country at least. Dr. Whittaker, Cincinnati, 1881, gives nineteen cases treated in the same manner, with circumstantial detail. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Nov. 30, 1889, commends the local treatment editorially, and in the treatise, "Diphtheria and Intubation," by Drs. Billington and Dwyer, 1889, the first topical application named is Monsel's styptic.

Prudden, in his exhaustive paper, "Etiology of Diphtheria," (*American Journal of Med. Sciences*, May, 1889,) advises local applications without indication of the agent. In the same number D'Espine (*Rev. Méd. de la Suisse Romande*, No. 1, 1889) advises irrigation with a dilution of salicylic acid, 1 or 2 in 1,000, or in infants, 1 in 1,000 or 1,500. Several mixtures have been used, as also pepsin and tripsin, to effect solution, sometimes with good results, according to reported cases.

In a large number of diphtheritic throats with enlarged glands of the neck, there is much necrosis of the membrane and fetor, and little doubt of the nature and specific origin of the disease. The best men may sometimes be deceived in the milder cases. The subsulphate application, however, is very effectual in both the severe and mild forms.

Not as frequently we observe a different condition—a diphtheritic membrane firmly attached in the fauces, whitish and blueish, not necrosed, without fetor, gradually spreading from tonsil to velum and uvula and palatal arch, and behind and beyond sight in the post nares. The living internal structures sometimes are slightly swollen; the lymphatics of the neck, as I have observed, considerably swollen. Great weakness and apprehension accompany this condition, and the usual remedies have little effect.

There can be no doubt here as to the specific nature and origin; nor can there be much doubt that it is the same in specific nature as the pseudo-membrane of croup. Here the two diseases meet and become identical, except in location.

About a year since my attention was attracted to the use of salicylic acid in solutions and ointments for corns of the feet. I tested the pure acid several times, especially in the troublesome soft corns between the toes. The part was moistened once a day and the acid rubbed in for a few days. The hypertrophied tissues would grow smaller and disappear, and sometimes the epidermis near would desquamate, but without sore-

ness of the underlying derma. The effect was quite perfect.

Case 1.—April last I had a case of diphtheria, and it occurred to me to apply the acid pure. It was applied hourly to the patch on the tonsil, where it *stuck* from hour to hour, enveloped in the moisture of the parts, but gradually thinning the deposit and limiting its extent. It was the child of very poor parents, and after three days the mother reported such improvement that it was not again seen. The child recovered soon.

Case 2.—June 4. L. J., girl, æt. 8; well-marked membrane over one tonsil, with slight necrosis of deposit only; enlargement of lymphatics of neck; some fever; no appetite. Powder of salicylic acid hourly, and ℞ tinct. ferri chloridi ʒiv, hydrarg. bichloridi, gr. ij, ♏; gtt. iij in a teaspoonful of water every hour or two; acid every two hours at night. Continued nine days, with occasional intermissions of some hours, when the membrane would again appear, again to melt under the acid. No extension of the membrane while the acid was used. No complaint of the peppery stinging of the remedy. Towards the last, after disappearance of membrane, used also, ℞ bismuthi subnitratis ʒss, olei minthæ piperis, ♏ vj, ♏. Make a fine powder. Dust the throat every hour or two.

For a little space beyond the part affected by the membrane the salicylic acid whitens the mucous surface, but without inconvenience and without any invasion of the disease. The surface soon again recovers. The little patient was seen daily twice from June 4th to 11th, and to 13th once daily, and last on the 15th. No sequences.

Case 3.—Sept. 4. Mrs. H., æt. 33; considerable fever; enlarged glands of neck; weak; patch on one tonsil and near it.

℞. Tinct. ferri chloridi ʒiv and hydrarg. bichloridi, gr. ij, ♏, gtt. iv in aqua ʒj hourly or two-hourly. Acid applied every hour or two; sometimes not so often. Complains of its stinging; membrane constantly recurs upon omission of acid. Finally applies remedy hourly with regularity, when the throat is no longer painful and the acid does not sting, and the deposit thins and disappears.

Mrs. H., a woman of intelligence, did not at first like the remedy, but seeing its benefit in the appearance and the lessened sensitiveness of the affected parts she became enthusiastic and thoroughly coöperated. She was visited twice daily for about nine days till Sept. 12th, when the tendency of the membrane to recur ceased. The bismuth mixture was then used with comfort.

A solvent of the membrane without irritation of the living structures *seems* to be found in the salicylic acid—much better than the subsulphate, whenever the membrane does not necrose and break down. The subsulphate hardens, in that way killing the acting membrane, rather than acting by solution. Creosote might act well but for its tendency to extend deeply.

The question of destructive action upon bacteria has not been discussed. It can in these instances be affirmed without discussion, and the treatment is considered from a different standpoint.

Hourly use of the acid, which is a very light powder, does not affect the youngest patient unfavorably by the amount swallowed or absorbed.

FACT *VS.* FICTION TOUCHING YELLOW FEVER INOCULATION, WITH A RECORD OF RESULTS WELL AUTHENTICATED.

BY J. McF. GASTON, M.D.,
FORMERLY A RESIDENT OF BRAZIL.

The discussion of the claims of inoculation with the attenuated virus of yellow fever for the prevention of this disease or the mitigation of the access, should it be developed, resolves itself now into a consideration of facts. No further argument in regard to the principle upon which inoculation is based seems requisite for the proper understanding of the data which have accumulated illustrating its results. The only question likely to be made is respecting the correctness of the statistics and the trustworthiness of the reporter. But observing the rules which ordinarily determine the value of evidence it will be seen that quite a number of witnesses corroborate the statements of the original experiments. If the observations made and recorded by different individuals at different times and different localities, coincide in the points which substantiate the efficacy of yellow fever inoculation, no reasoning as to the theory of propagation, can invalidate the conclusions. True science deals with facts and not with theories, so that we must accept the evidence of those who report facts unless the credibility of the witnesses is impeached.

As no interested motives can be attributed to the many Brazilian physicians who have recently investigated the process of inoculation introduced by Dr. Domingos Freire in Brazil, I will present the testimony as published in the Brazilian newspapers.

A fitting introduction to the report of observations from the city of Campinas, in the province of S. Paulo, is afforded by a letter addressed to the editor of the *Gazeta de Noticias*, of Rio de Janeiro, on May the 12th, 1889, of which the following is a literal translation:

"I ask of you the kindness to insert in your valuable paper the accompanying letter from my distinguished colleague, Dr. Angelo Simões; who has labored so diligently in Campinas for the active propagation of inoculation against the yellow fever.

"By this letter it will be seen the same favorable results obtained here in the capital, as also in Nictheroy, Santos, Vassouras and Desengano, are being splendidly verified in the ill-fated Campinas; and I only regret that this was not done earlier for security against such evils and misfortunes. In due time I will publish the general statistics which place in evidence all the facts which militate in favor of the prophylactic measure, that from 1883 in four epidemics have clearly shown its value. In the meantime, while I recognize the support given by the press, a great part of the population and my colleagues; the ill-will of some, the ignorance and indifference of others have been obstacles to its general adoption, as is requisite for a complete effect of a preventative recourse which experience has fully sanctioned.—Dr. Domingos Freire."

Following is the letter referred to above:

"CAMPINAS, May 7th, 1889.

"I received your letter of the 2nd inst. and with it the culture liquid. I have vaccinated up to date 630 persons and I think none remain to be vaccinated. I have gone through almost all the streets and meet only either those already vaccinated or individuals who have been attacked. One or another has refused to be vaccinated, but almost all have accepted it. I have proceeded with the greatest caution; I do not vaccinate those who have had the disease, nor those in the incubatory stage. I think, then, that the portion of the population not attacked by the disease have been vaccinated; and the new cases which are few, that are appearing in individuals who do not wish to avail themselves of this prophylactic, without counting one or another vaccinated, who has had the disease mildly.

"When the epidemic is ended I will prepare the statistics here for publication, for which I ask permission, presenting succinctly passing events without omitting anything.

"Withall I do not expect my labor to end with this. I intend to vaccinate, perhaps on a grand scale, those who return to the city with a view to protect them from the disease during the next year.—Dr. A. Simões."

It is proper to state that my home in Brazil for a number of years was at the city of Campinas, and hence the facts connected with this outbreak of yellow fever among the people of this place, and the result of the use of inoculation for the arrest of the epidemic have a peculiar interest.

I have to assure my colleagues that what is herewith presented for their consideration is worthy of credit.

I cannot render a better service to the true history of inoculation than to present a few of the many notices which are recorded in the files of the newspapers of Campinas which are in my possession. These are sent by friends living in that section who have taken no part in the discussion of the merits of inoculation as a preventative of yellow fever.

The *Correio de Campinas* of April 25th, 1889, contains the following statement:

"VACCINATION AGAINST THE YELLOW FEVER.—The distinguished physician Dr. Domingos Freire vaccinated yesterday in the Misericordia Hospital 34 persons, who went there to secure immunity from the terrible epidemic.

"Besides this many persons were vaccinated in their own houses.

"Dr. Domingo Friere was assisted by the noted practitioner, Dr. Angelo Simões, who continues to aid the great scientific investigator.

"We continue to recommend to the people a resort to vaccination as the only preventative against the yellow fever.

"If all would avail themselves of that sure prophylactic, Campinas would be free from this great scourge in a few days."

We extract from another issue, May 1st, 1889:

"Vaccination against yellow fever continues to be well received by the people.

"Yesterday, Dr. Angelo Simões, assisted by the pharmaceutist Soares da Camara, vaccinated 62 persons, completing the number of 510 who have been vaccinated.

"Up to the present time there is no notice of any of the persons vaccinated being attacked by the epidemic."

It is unnecessary to multiply this list of publications, but there are two points of importance which may be noted in the statements made:

"All the persons who have resorted to that preventative measure are in excellent condition, not one of them having been attacked by the epidemic.

"It is notable that on the day following the vaccination almost all the subjects perceive symptoms of fever, more or less marked; this fever, however, disappears without the use of any medicine."

I may state that among the names of those vaccinated, many of my former acquaintances are recognized, who would be incapable of practicing any deception in this matter.

Those of my colleagues in this country who have known anything of my antecedents will not attribute to me a purpose to mislead them in regard to the facts developed by the large number of vaccinated having escaped unhurt, while others were dying around them. The great publicity given to the vaccination in the large hospitals and churches, with the records of the names and dates, affords an additional assurance of the trustworthiness of the statistics. It is not any longer requisite to send a commission to study this process from a scientific standpoint, but we have simply to accept or reject the testimony.

The result in the city of Campinas, in the

province of S. Paulo, is shown by a telegram on May 3rd, 1889, as follows:

"Dr. Angelo Simões, aided by the pharmaceutist Camara, has vaccinated more than six hundred persons by the process of Dr. Freire, having obtained excellent results. The epidemic is declining rapidly. The population is satisfied with the result of the vaccination."

This is taken from the *Gazeta de Noticias*, of Rio de Janeiro, and another telegram is published in the same paper from Campinas, May 11th, as follows:

"Of the seven hundred vaccinated up to the present time only two have died of the yellow fever, yielding therefore an excellent result of this prophylactic measure."

For the information of the profession as to the effects of inoculation upon the subjects, the following report is translated from a newspaper of Rio de Janeiro, *O Paiz*. It is by Dr. Urias A. da Silveira, author of "Brazilian Therapeutics," dated at Barra Mansa, August 29th, 1889, and addressed to Dr. Domingos Freire.

"Considering of utility, the two cases of vaccination against yellow fever done by you upon two persons of my family in your office at 68 Rosario street, as statistical elements, I come spontaneously to bring them to your attention.

"I present faithfully the facts as observed by me:

"*Case 1.*—D. M., 36 years old, sanguine, nervous temperament, enjoying perfect health, vaccinated 3:30 P.M., July 25th, 1889. General condition: At 6 P.M., hot flushes; at 8 P.M., the temperature in axilla 37.7 cent.; at midnight 38.1 cent.; at 6 A.M. on 26th, general sweat without any medication and reduction of temperature to normal.

"Pains of the limbs, especially the lower extremities, frontal headache, vertigo, congestion of conjunctiva with running from eyes, slight yellow tint of conjunctiva perceptible to all. This followed by discomfort for twenty-four hours and tendency to drowsiness.

"Diminished appetite, urine scanty and high-colored, of which a sample is presented.

"At the outer and upper third of the left arm, where the injection of 1 gram of the culture liquid of the attenuated micrococco xanthogenico was made, there was observed six hours afterwards a red spot, of a congestive nature and slightly swollen, painful to the touch and pain increased by any movement. This spot continued for thirty hours, becoming then paler, less painful and less swollen. It gave place subsequently to a greenish-yellow discoloration, which disappeared after the seventh day.

"*Case 2.*—N. N., 14 years old, nervous lymphatic temperament and in perfect health.

"The same local and general phenomena described above were observed with little modification, but more marked and accompanied with nausea and abundant flow of saliva. In both the signs of general disturbance preceded those of the localized lesion on the arms. The reunion of these signs in harmony and their development, demonstrates the results of abortive cases of yellow fever or that the symptoms correspond to it.

"Having these two facts of great significance, based on what I have learned from your elaborate work upon the vigorous method employed in the culture of the germs of yellow fever, and the attenuation of their violence, with due regard to what all bacteriologists practice, I am convinced that to you belongs the palm of victory for the discovery of the immediate cause of yellow fever and of the means of preventing it, with like benefit as the cow-pox in variola.

"A vaccination by the attenuated virus of yellow fever by the process of Freire is, in my humble opinion, the most efficacious hygienic measure of the present day, as it is the greatest factor employed for the extinction of yellow fever, already endemic in Brazil. Without it, fruitless and useless will be whatever means are employed to protect large cities. They may have the merit of diminishing their epidemic explosions but not to extinguish them entirely, as will occur if both should be employed together.

"Allow me, in conclusion, to express with frankness my opinion upon your process. It is that the vaccination of Freire is beginning to enter upon the scale of consummated facts, as one of the grand conquests of science over the greatest scourge of humanity.—Dr. Urias A. da Silveira."

In connection with these data relative to yellow fever inoculation from various sources, calculated to impress the medical profession with its efficacy, I will give a translation of the statistical report of the results in different portions of Brazil from 1883 to 1889, recently published by Dr. Domingos Freire. While there have been announcements in the medical journals and in the newspapers of the United States, to the effect that Dr. George M. Sternberg has investigated this matter and pronounced an unfavorable decision in regard to the process of inoculation adopted by Dr. Freire and the results obtained by it, this matter is now submitted to the thinking man as a reality.

"Statistics of preventive inoculation against the yellow fever.

"The epidemic of yellow fever which was developed in Rio de Janeiro during 1888–89, and was propagated to various places in the interior of Brazil, serves to demonstrate for the fourth time the prophylactic value of vaccinations by means of the attenuated microbe of this disease.

"It was between the months of December and March that the epidemic attained its greatest intensity; in the month of May of 1888 the first sporadic cases appeared, and the last in June, 1889. We inoculated in this period 3,520 per-

sons, of whom 988 were straugers and 2,532 Brazilians. Distributed thus: Rio de Janeiro, 2,138; Campinas, 651; Vassouras, 199; Nitheroy, 163; Santos, 133; Desengano, 102; Serraria, 80; Rezende, 54. The disease prevailed with great intensity at all these points.

"Among the 2,532 Brazilians are found 1,680 that correspond very much to the 998 strangers, because in this number are embraced not only individuals coming from the interior and residents of this city for less than six years, but likewise children are included, which are proven to have a susceptibility similar to strangers themselves.

"The percentage of mortality was 0.79 among those who were vaccinated. In Santos, Rezende and Serraria the immunity of the vaccinated was complete. The percentage of each locality was the following: Rio, 0.98; Campinas, 0.46; Vassouras, 0.5; Nitheroy, 0.75; Santos, 0; Deseugano, 1.9; Serraria, 0; Rezende, 0."

Let us see now the mortality from yellow fever among those not vaccinated. It was 4,115, distributed as follows:

"Rio, 2,407 (including the sick of the Maritime Hospital of Santa Isabel); Campinas, 812; Vassouras, 15; Nitheroy, 177; Santos, 650; Desengano, 22; Serraria, 21; and Rezende, 11.

"Of the 4,115 there are about 2,800 strangers who died, being 1,176 in this city (Rio de Janeiro); 750 in the Maritime Hospital; 63 in Nitheroy; 500 more or less in Santos; 300 more or less in Campinas; 7 in Desengano; 3 in Rezende; 3 in Vassouras.

"The deaths of Brazilians make up one-fourth, who for the most part have not been habituated to the virus, being in localities where the scourge has never before broken out.

"With a view to illustrate the efficacy of the inoculations, let us record the ratio adopted by Dr. Jemble in Senegal. He verified that among the strangers residing there from one to three years, 75 out of 100 are attacked with yellow fever and 66.6 out of 100 die of it. Let us make application of these proportions to our vaccinated strangers or natives, that resided in the infected district from a few days to three years.

"There were inoculated in Rio de Janeiro 1,183 persons under the conditions mentioned, and of these, the deaths should have been at least 591. Behold! only 18 died; so that 573 lives were spared. In Campinas, a city never visited previously by yellow fever, the whole of the 651 vaccinated may be considered as newcomers. Among these the deaths should have been 325, whereas there were only 3, and these were Brazilians, with complete immunity of 152 strangers.

"Likewise in Vassouras there should have died 5, while there was only one victim. In Nitheroy there should have been 5 deaths among the 11 strangers under the above conditions, yet there was but one fatal case among those vaccinated. In Santos, in the list of 57 individuals under the same conditions, 28 should have succumbed, yet there was not a single case of death amongst our inoculated persons in this city. In Desengano the two unfavorable results were of strangers who had resided there six and eight years. In view of the fact that the disease prevailed in that place for the first time, all of the 102 inoculated may be reckoned as susceptible in like manner as recently imported strangers. It might have been expected that at least 51 should have perished.

"In Serraria, making a similar calculation, 39 should have died, whereas the immunity was absolute. In Rezende the 54 inoculated should have furnished 27 fatal cases, as the disease had not appeared there previously, while in this city there was complete immunity.

"GENERAL SUMMARY.

"From 1883 to 1889 we inoculated 10,474 persons with a mortality of 0.4 per hundred. From 1883 to 1884, 418 inoculations; from 1884 to 1885, 3,057 inoculations; from 1885 to 1886, 3,473 inoculations; from 1888 to 1889, 3,532 inoculations. Total, 10,474 inoculations.

"The inoculations were interrupted during 1887 on account of my visit to Europe and the United States, where I went to present the result of my efforts, which happily were well received.

"It is proper to note that with a view to avoid the criticisms of the ill-disposed, I have authenticated the results obtained this year; and I have the documents relating to the inoculations, all signed by eminent physicians, many of them sanitary authorities, by the members of municipal councils, by police officers and by many other distinguished and trustworthy persons. Would that this could have so happy an exit in the minds of those who are charged with the most precious of all interests—the health and the life of the people.—Dr. Domingos Freire.

"Rio, October 2, 1889."

With much labor and painstaking, these data have been collected and recorded, without any other object than the vindication of truth by facts. I am convinced that influences have been brought to bear upon the public mind in this country, which have prevented an impartial judgment in regard to the merits of this process of inoculation as a prophylactic against yellow fever. But with the report of such varied observations and statistics as are here presented, I am convinced that the members of the medical profession will not any longer shut their eyes to the overwhelming weight of testimony in favor of the protection afforded by this measure.

If our sanitary authorities will take steps to test yellow fever inoculation as it has been done in Brazil, all controversy will be ended by the realization of its protective agency in the arrest of yellow fever in our Southern cities.

MEDICAL PROGRESS.

Actinomycosis. — O. Bujwid reports seven cases of actinomycosis observed by him in three years. The first two cases occurred in a young printer and his betrothed. The abscesses which had formed were incised, cleansed and dressed antiseptically. Up to the present time, eighteen months after the operation, there has been no return of the disease. The third case occurred in a chimney sweeper. In this case also the abscesses were opened and scraped out, but from time to time the disease recurred. In the last year the writer has observed three other cases similar to the ones already described, and one case of cutaneous actinomycosis of unknown origin occurring in a chimney sweeper. In the writer's opinion the treatment should be of a radical character, though the prognosis, even in cases where there is abscess formation with mixed infection, is not unfavorable.— *Wiener Med. Woch.*

O'Dwyer's Intubation of the Larynx.— Guyer reports (*Cent. für Klin. Med.*) the results of intubation of the larynx, as performed in the Children's Hospital of Zurich. Up to the end of May, 1889, the operation had been performed on account of acute laryngeal stenosis in twenty-seven cases. Of these thirteen recovered, of which two were infants, aged 8 and 13 months respectively; the remainder varied in age from 2 to 8 years. In all these cases the diphtheritic character of the stenosis was proved by the affection of the larynx and by the membrane coughed up. In all the cases the stenosis was so severe that there was only a question of choice between tracheotomy and intubation. In the fourteen cases which died the cause of death in eleven cases was extensive bronchial diphtheria; in two, pneumonia; in one, nephritis. In most of the cases the children were able to dispense with the tube after five or six days. In four cases in which removal of the canula gave rise to bad symptoms its replacement was followed by excellent results. The reporter believes that intubation will not supplant tracheotomy, but merely limit its applicability.

Treatment of Diabetes.—Dr. Robin has made some interesting observations of patients suffering from diabetes, in which he carefully examined the chemical composition of the urine and studied the influence of various substances upon it. He reaches these conclusions: Biological chemistry shows that in diabetic patients there is not only an exaltation of the various processes of nutrition, but also an increased functional activity of special organs, chiefly the liver and the nervous system. In consequence, this undeniable increase in the functional activity of the general nutrition and of the hepatic cells, brought about by a direct or reflex nervous irritation, must be made the point of departure for the therapeusis of diabetes. *A priori* one may be sure that any remediable measure which in any wise retards the general changes, or those of the nervous system, will certainly lessen the glycosuria. Still, there is a prospect of success with a remedy only when it exercises its restraining influence upon the general changes by means of its primary influence upon the nervous system, and when it does not act too powerfully upon the functions of this system. The therapeutical remedies which impair nutrition must be banished, for it has been clinically as well as experimentally proven that they do not yield useful results.

The therapeutical indications in diabetes are as follows:

1. One must remove from the organism, by means of suitable diet, the materials that form sugar, and deprive the liver cells of the substance that gives rise to their functional irritation.

2. One must restrict the excretion of assimilated materials and the formation of glycogen by means of therapeutical remedies which check the chemical processes of organic life by means of their primary action upon the nervous system.— *Inter. Klin. Rundschau.*

Creolin in Gynecology.—Extensive experiments have been made by Chéron (*Annals of Gynecology*) with creolin in 2 and 5 per cent. solutions. The weaker solution was used for vesical injections in cases of gonorrhœa. Neither poisoning nor pain resulted; the discharge from the urethra diminished and soon disappeared, injections being made every other day. Gonorrhœal vaginitis was quickly improved by irrigation of the vagina and vulva with the 5 per cent. solution. In purulent cervical endometritis the diseased tissues were first carefully cleansed with absorbent cotton, after which an application of the 5 per cent. solution was made. After a few applications the suppuration ceased. Creolin gauze was found to be an excellent substitute for iodoform gauze in cases of suppurative and hemorrhagic endometritis in which a tampon was required. From the foregoing it was concluded that creolin has a very positive effect upon the microbes of gonorrhœa and of pus, and that in ordinary doses it is neither painful nor toxic.

Alcohol in Puerperal Fever. — Dr. A. Martin, of Berlin, reports (*Internat. Klin. Rundschau*) his experience with alcohol in the treatment of eighteen cases of puerperal fever. Of these eighteen patients, all of whom were very ill, some of them, indeed, moribund when the treatment was begun, five died, three of them only from the infection. The amount of alcohol administered was enormous; thus, one of the pa-

tients took in six weeks seventeen bottles of cognac, thirteen bottles of Burgundy, 37 half bottles of champagne, four and a half bottles of other heavy wines and six bottles of porter. At no time was there any alcoholic intoxication observable. In some cases, in connection with the alcohol other measures were employed, such as the removal of the decomposed decidua, irrigation and permanent drainage. In the treatment of the fever the usual antipyretics must be given, as this is not influenced by the alcohol. In this regard Martin does not agree with Breisky and Conrad that the action of alcohol is that of an antipyretic; but, on the contrary, he seeks to obtain by it an increased heart's action and an increase in the patient's power of resistance against the infection. Martin recommends a closer observation of this method of cure, which should not, however, be overestimated.

DIETETIC TREATMENT OF CHRONIC BRIGHT'S DISEASE.—In a series of experiments under varying conditions upon healthy persons and those afflicted with diseases of the kidneys, DR. J. SCHREIBER endeavors to solve the problem whether patients with chronic nephritis should be nourished with food rich or poor in albumen. This question, as is known, has been answered by Senator and by Semmola in the latter seuse. According to the reporter's experiments, it appears as though the opinion of Senator and others, that food rich in albumen exerts an injurious effect upon cases where there is no albumen present, is incorrect. The ingestion of large quantities of raw eggs with food rich in nitrogen does not lead to albuminuria in healthy individuals, or in those disposed toward albuminuria. A mixed diet rich in nitrogenous elements, with coagulated or fluid albumen added to it, does not lead to increased excretion of albumen in the urine of diabetic patients; indeed, it often diminishes it.

The reporter offers two observations from Leyden's Clinic to prove that the milk diet insisted upon by Semmola does not influence the absolute quantity of albumen in the urine. The reporter concludes that inasmuch as Bright's disease is one of the affections that lead to gradual and generally progressive exhaustion of the forces, the diet should be of a most comprehensive character; the forms of diet should be altered to meet the exigencies of each case.—*Inter. Klin. Rundschau.*

GLYCERINE ENEMATA.—In order to discover the laxative action of glycerine, C. LÜDERITZ has experimented upon rabbits, in which the effects produced by the enemata were observed through the opened abdomen. After the injection of a moderate quantity of glycerine, a little transparent fluid soon appeared in the rectum around the fæces, and gradually became apparent throughout an extent of 15 cm. from the anus. At the same time the mucous membrane became more injected, and energetic movements were seen in it, which had the effect of forcing downward the contents of the intestine. These movements were only manifested in the presence of the fluid referred to. In some cases the intestinal movements were not powerful enough to overcome the action of the sphincter, and no evacuations occurred; in the other cases evacuations took place without visible intestinal movements. The action of the glycerine, therefore, is a local one, confined to the portion reached by the glycerine. The reporter is of the opinion that the action of the glycerine in man is explained in the same manner.—*Centralbl. f. Klin. Med.*

BUTYLCHLORAL IN TRIFACIAL NEURALGIA.—Butylchloral appears to possess, besides its diaphonectic action, a certain specific influence upon the trigeminal nerve, which can be anæsthetized throughout its entire course by an internal dose of from 1.0 to 3.0 grm. of this agent. Prof. LIEBREICH (Berlin) gives the following formula for neuralgia of the trigeminus.

R	Butylchloral.	3.0–5.0 grm.
	Alcoholis rectificat.	10.0 grm.
	Glycerinæ	20.0 grm.
	Aq. dist.	120.0 grm.
S.	Two to four tablespoonfuls at a dose.	

—*St. Petersburger Med. Woch.*

IMPORTANT IN FUMIGATION.—DR. SQUIBB, of Brooklyn (*Medical News*), in a recent address on sulphur fumigation in the prevention of infectious disease, directed attention to the important fact that, in the absence of moisture, the penetrating power of sulphuric acid gas is only slight, and for this reason there should be an abundance of aqueous vapor in the apartment in which the sulphur is burnt. Boards of Health neglect to emphasize this fact, which is not known to the laity. The *Medical News* recommends that water be kept boiling in the room in which gas is being generated. Dr. Squibb also called attention to the relative uselessness of chlorine gas as a disinfectant in the absence of aqueous vapor.—*The Pacific Record.*

INFLAMMATION OF THE LUNGS AS THE RESULT OF THE DECOMPOSITION OF CHLOROFORM BY GASLIGHT.—ZWEIFEL observed in a series of laparotomies which he was obliged to make by gaslight in a badly ventilated room, that the patients exhibited, during and after the operation, symptoms of severe bronchial irritation, leading in some instances to bronchitis and catarrhal pneumonia, whereby the dangers of the operation were greatly enhanced. He attributed these results to the decomposition products of the chloroform vapor produced by the gaslight. He was, therefore, led to substitute ether for chloroform when operating by artificial light, and with the most gratifying results.—*Cent. für Klin. Med.*

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SATURDAY, MARCH 22, 1890.

THE NATURE OF TETANUS.

For a great many years the epidemic and contagious nature of tetanus has been asserted by various medical and surgical writers, and their observations in the light of recent experiment is interesting. LARRY, THIERRY and HUTIN recorded many outbreaks of this terrible disease after the Napoleonic battles, and MURAT in a thesis published in 1816 reports an epidemic of tetanus following the battle of Jena, to which the wounded who had sought shelter in the churches and churchyards (localities in Europe serving as burying-places), it may be recalled, were especially liable. In 1854 SIMSON, and 1855 BENJAMIN TRAVERS, of Edinburg, asserted that tetanus was infectious; a statement affirmed by VULPIAN in 1866, and reaffirmed by TRELAT after his experience in the Franco-Prussian war of 1870–71.

Acting upon the similarity of tetanus and hydrophobia and following the example of PASTEUR, NOCART, in 1882 tried in vain to inoculate the the disease with cerebro-spinal fluid and emulsions of the medulla obtained from tetanized animals. This was later accomplished by SHAKESPEARE, of Philadelphia. The same year, 1882, BROWER and CURTIS pointed out the existence of bacteria in the blood in this disease. In 1884 tetanus was first experimentally transmitted to rabbits by inoculation, and at the same time NICOLAIER, of Göttingen, found that animals inoculated with soil taken from the roads developed symptoms comparable to those of tetanus in man and determined the constant presence of a bacillus but never succeeded in isolating and cultivating this microörganism. He attributed the symptoms to a ptomaine generated by the organism he had described and which now is known as the bacillus of NICOLAIER. His finding was confirmed later by HOCHSINGER, OHLMUELLER, GOLDSCHMIDT, BEUMER, LAMPIASE, NOCARD, SHAKESPEARE and others, and BRIEGER in 1887 communicated to the Berlin Medical Society the method by which he had isolated a crystalizable toxic ptomaine which he named *tetanine*, and which would invariably cause tetanus in animals inoculated therewith.

The difficulty has been to isolate the bacillus of NICOLAIER and experiment with pure cultures. Until this was done the position of this investigator remained only a working hypothesis. KITASATO, of Tokio, Japan, finally accomplished this result. His experiments were reported in April, 1889, before the Congress of German Surgeons at Berlin. He found these bacilli able to withstand a temperature of 80° C. which effectually destroys the adventitious organisms and left a pure culture. They are extremely hardy and refractory to influences quickly destructive of most bacteria, requiring an exposure of five minutes to 100° C. of heat and of ten minutes to a five per cent. solution of phenic acid to absolutely prevent their growth. They also endure very low temperatures, an interesting and important point when the great rôle attributed to cold and wet by the older writers is recalled. He also reported that they could be best cultivated in acid media in an atmosphere of oxygen. By this process WEYL, of Berlin (*Sem. Méd.*, 90), has managed to transmit tetanus even to dogs, which hitherto have been considered refractory to this disease, and by successive cultures and inoculations with lower animals has scientifically demonstrated the specificity of the bacillus in question.

The elective action of the virus upon the medulla has been pointed out even in very early descriptions of the disease and is shadowed forth in the popular names of the malady. A number of writers have considered the morbid process to be an inflammatory condition in that portion of the cerebro-spinal apparatus and very rarely have recorded anatomical changes in this region found post-mortem. It is interesting to know that inoculations with preparations of the medulla

are more certain than with other portions of the central nervous system, and it may be permitted to expect that a manner of attenuating the virus and even of securing protection against the disease is within the accomplishments of the immediate future.

Added to the experimental foundation for a belief in the microbic origin of tetanus are the clinical features of the disease, which have been much amplified by VERNEUIL, whose name has long been associated with special studies of this malady. He has recently presented before the Academie de Médecine of Paris a carefully prepared brochure on its origin, giving very numerous verified instances of its epidemic and infectious influence, and its mediate and immediate contagiousness. Of all lower animals the horse is most subject to tetanus, to which fact he gives much importance, and directly or indirectly traces infection to an equine source, very frequently through contamination with an infected soil, a point borne out by the experiments of Nicolaier, already mentioned. The earth may be contaminated in various ways, by the excreta of tetanized animals or by their bodies, and this, in his view, accounts for the preponderance, in traumatic tetanus, of wounds of the lower extremities and of wounds made by objects that have been in contact with the earth. From extensive statistics he notes the interesting fact that cavalrymen are twice as subject to tetanus as artillerymen, and four times as compared with infantry, and alludes to the corresponding geographical distribution of the equine and human form. From a mass of data he feels justified in describing the origin of tetanus as equino-telluric, and after asserting the transmissibility of the disease by instruments and the hands of the surgeon he urges the necessity for public hygienic control of the malady in man and the lower animals.

Altogether the etiology of tetanus may be considered as reasonably well settled, and the necessity for preventing the spread of infection and destroying sources of contagion demands precautions which readily suggest themselves. It is to be hoped that treatment of the disease will benefit by our added knowledge of its real nature; and it may be apropos to mention three cases of tetanus which recovered under hypodermic injections of phenic acid, reported by Professor BACCELLI, of Rome (*Sem. Méd.*, 90). He employed a centigramme of the acid every two hours, and advises double this quantity, if necessary. In view of the fact that the bacilli of Nicolaier are refractory to a five per cent. solution of phenic acid in culture experiments, this medicament can not act entirely through its germicidal properties, and, indeed, Baccelli attributes its efficiency to the sedative action it exerts upon the medullary centres.

EARLY AND LATE SUCCESS.

A very common error, or rather misguided expectation on the part of the aspirant for medical honors, is immediate acknowledgment. He looks for a swift recognition, perhaps naturally enough, since exuberant youth always paints with glowing colors and ever talks in hyperbole, without regard for the experience of the past. But in the review of events, can it never be brought home, how many cruel disappointments have there not been, and how much fame is based upon episode. What really, in popular esteem, would the reputation of SHERIDAN have been worth without his "Ride," or that of SHERMAN without his "March to the Sea?" Not that we would disparage, but rather that we would exalt the works which rendered such achievements a possible opportunity. In our own profession, in which theory is so often marred by the immaturity of feeble premises, there are examples certainly more than a score. The real discoveries that have survived have had sufficient life to begin revolutions. Bigotry is the popular clamor, while time, which has wrought so many miracles, is the professional. HARVEY and JENNER encountered opposition, not through jealousy, but from the distrust of the crudities which preceded. They deserved honor for their patience in investigation, but received it for their discoveries. The memory of the learning required has perished with them. It represented a toil which sacrificed many comforts and endured even a penury that might have appalled the determination of PALISSY the potter.

DR. BEARD, misled by statistics which suited his purpose, asserted that every man lost his opportunity for distinction after 40, and cited examples of many who became famous while yet in their youth. This may apply to instances where ardor and dash are concerned, as in military life or in vocations where imagination is a potent

factor, as in oratory or poetry; but it certainly can never hold good where laws destined to govern a wide range of subjects are to be formulated. In medicine, where the experience of predecessors cannot be rated for naught, where truth has so many side-lights, there must be a deal of facts that require collation, and there must also be much rejection of the irrelevant before arriving at a general law. Hence Koch did not hurry to his conclusions, but prudently waited with the risk of a life untimely ended. Obviously no law can operate before its statement—he therefore wrought long and patiently.

In many departments of science, where the masses are the beneficiaries, the results are to be widely applied. Rules may have their exceptions, but may we not agree with PAGET that in the first announciation they are not sufficiently comprehensive? There must be much study, much deprivation of alluring pleasures, and much concentration of energy before the goal looms up above the horizon. How then can the student, beset with the material problems of life, which consume so much time, at once leap into recognition? On the contrary, the physician must wait for his rewards with due and circumspect modesty, consenting to deserve rather than to possess. To be sure, there may be shorter cuts, particularly to wealth—there may be the aid of business arts; there may be a shoving of wares possibly by street criers, but there can be no solid gains in reputation or even in self-respect. But few charlatans have died wealthy.

Hard, indeed, is it for the majority to toil without the prospect of immediate reward, but the doom of those who deal in the vague or intangible, cannot expect gratifying results, when sturdy growths are so slowly evolved. He builds well who builds solidly.

Early successes are seldom enduring, and in verification of this statement, history is constantly multiplying its examples. It is he who, though baffled by many failures, who still perseveres and, provided life is long enough, succeds at last. If he builds not the structure he yet adds something to the material which others may use. SIR BENJAMIN BRODIE, and before him JOHN HUNTER, won enduring reputations despite careers which began in poverty and obscurity. As some one has aptly said, "Your great men are always surprises." Let us therefore work and wait, for work has its pleasures, and waiting its reward.

AN UNUSUAL COLORADO WINTER.

The past winter in Colorado has been a surprise to the older residents of the State. The rains of November, succeeded by snow in December, and the paucity of clear days, have caused misgivings lest the type of the climate shall be changing from dry to humid, and from bright to dismal. There is no absolute fixity about climate anywhere, Colorado inclusive. During recent years there has been a great uniformity in the winter conditions, so much so that many persons have felt like denying the possibility of anything other than bright and bracing weather. The climatological records, however, show that there have been just such wet winters in former, although not in recent years. The inference is therefore fair that the last winter is not an indication of a change in climatic character—in fact, the like may not be observed again for a decade. An absolute fixity of climate is, cosmically speaking, an impossibility. Colorado must have its variations, but their extent and range are less than in the East. The past winter has been one of greater variability than usual, but the type of this variability has been as true to that locality as at many other more easterly points of observation. The excess, as compared with many former years, of winter rainfall and snow has blinded not a few of the newer colonists in Colorado to the fact that there has been a goodly proportion of hours of sunshine in the latter half of the season. Within that time there has been much fine, bright weather, as a partial vindication of those who are in the habit of speaking of Colorado as "the sunshine land," so that of late the advantages of the climate have been sundry, as one might say, and yet not too dry. To speak of a fact that has been observed, there have been days during the past winter when there would be a light snowfall in the morning, and yet the soil would in the afternoon be sufficiently dry to warrant pedestrians to take their exercise without their overshoes; the warmth of the sun and of the occasional wind, called "the chinook," together with the absorbent nature of the soil, speedily effects the obliteration of the lighter falls of snow. One day in February the thermometer marked 80° F. in the shade, and fully 20° higher in the sunlight.

EDITORIAL NOTES.

HOME.

National Association of Railway Surgeons.—The third annual meeting will be held in Kansas City, Mo., commencing May 1, 1890, and continue three days. Members who expect to read papers at that meeting must send the title of their papers to Dr. E. R. Lewis, *Times* building, Kansas City, Mo., on or before April 1. This course is taken that the programme may be arranged, printed and sent out to each member by April 15. J. H. Duncan, Chairman Committee of Arrangements.

Changes in the Dates of Meetings.—The annual meetings of the Illinois State Medical Society and of the Medical Association of the State of Missouri, will be held on the *6th* instead of the 20th of May, in order that their members may attend the annual meeting of the American Medical Association, to be held at Nashville upon the latter date. Michigan is now the only State whose annual meeting will be in conflict with that of the Association, and it is to be hoped that a like change will be made there. It is obvious that appropriate action should be had which shall prevent such conflicts in the future.

The Cooper Hospital at Camden, N. J.—The hospital at Camden is reported by the *Medical Register* to be the residuary legatee of the estate of John H. Wright, of which the estimated value is not less than one hundred and twenty-five thousand dollars.

The Literature of Gynecology.—The output of the gynecologists, in a literary way, has been summed up by Dr. A. J. C. Skene, of Brooklyn, for the last eight years, in a grand total of 807 books and 7,505 minor articles and pamphlets, or on an average about two books and eighteen articles per week. The *London Recorder* asks the prolific authors to pause for a little period in order that the general practitioner may catch up, or, as the frequent saying is, that he may "get abreast of the times," in regard to this branch of the work.

Three Courses of Medical Lectures.—In the attainment of a higher standard of medical education, many of our medical colleges are rendering valuable service. The Faculty of Starling Medical College, of Columbus, O., have determined that three courses of medical lectures shall be required of candidates for graduation, after the session of 1890–91. The Faculty of the Hospital College of Medicine, Louisville, Ky., has adopted a similar rule, requiring all students after the session of 1891 to attend three courses of lectures in separate years as a condition precedent to graduation.

Dr. L. S. McMurtry, formerly of Danville, Ky., who in the development of The Journal has rendered much valuable service, has removed to 652 Fourth Avenue, Louisville, Ky.

FOREIGN.

Invention of the Microscope.—The third centenary of the invention of the microscope will be celebrated this year at Antwerp, where a historical exhibition of microscopes will be held, and public demonstrations will be given of the structure of the instrument and of its development from its first beginnings to its present form.

The British Medical Association Library.—A recent number of the *British Medical Journal* contains a list of "wants" in regard to the files of the growing library of the Association. In order to complete its sets, Volume iv of the American Surgical Association's Transactions, and Volumes vi, vii, and x of the third series of the College of Physicians of Philadelphia, are needed. With his customary energy, Mr. Ernest Hart, editor of that journal, has pushed forward the foundation of a national medical library and has himself contributed to it very generously, as the lists published from time to time have demonstrated.

A Penal Colony Afflicted with Leprosy.—Leprosy is reported to have found its way to New Caledonia, the French penal colony, and already there are hundreds of cases among the natives and convicts.

Medical Associations in Cuba and Chili Proposed.—The advantages derived by the medical profession by the formation of large voluntary societies have attracted attention in the countries to the south of us. The *British Medical Journal* states that a Medical Association will be organized in Cuba and also in Chili. Of the one proposed in the latter country, it says, the object of the Association is "to give help to all members of the profession or to their families as often as they are in need of it." It will include all the medical men in the country.

TOPICS OF THE WEEK.

MAL-DIGESTION AS RELATED TO FUNCTIONAL DISORDERS.

Dr. W. H. Thomson (*Med. Record*) says: That as a teacher of Materia Medica he had long been in the habit of dividing medicines into two great classes, namely, the organic and functional, the former being those whose special remedial action could never be secured by one dose, but by the accumulated effects of many doses, as bichloride of mercury in syphilis; the latter being those whose entire specific action could be obtained by one dose, as opium. Organic medicines were given for organic diseases, and produced no symptoms of their own; functional medicines did nothing but produce symptoms. Organic medicines showed no effects except in disease; functional medicines produced the same effect in health as in disease.

Neurotics do not Cure.—Neurotics belonged to the functional medicines, relieving symptoms but not curing the disease. Structural changes in an organ produced corresponding functional derangement, but the converse did not necessarily follow, that functional derangements must always have their corresponding structural change.

Distinction between an Organ and its Function.—This became apparent when the difference between an organ and its function was clearly apprehended. One could stimulate or retard the working of an organ, as of the lungs, without affecting its structure. The human body might, in this respect, be compared to a steam engine or a lamp. The function of a lamp was to give off light. This function would be materially modified according to whether the lamp were fed with pure or contaminated oil, although its structure remained unchanged. Thus one could see the error of those who looked forward to the time when the term "functional," as applied to human ailments, should be banished, and a name be given based on the anatomical changes which it is hoped would in all cases be discovered.

The Practical Aspect of the Question.—If every functional nervous disease was due to a distinct morbid change in nerve-cell or fibre, then we must continue to search in the nerve-cell or fibre for that change, and for its causation, and be guided in the treatment accordingly. If, on the other hand, some of these functional nervous disorders were unattended by alteration in the nervous structure, as a poor light might result from bad oil in a good lamp, then we must look elsewhere for the cause and remedy.

Symptoms Distinguishing Functional from Organic Nervous Diseases.—The symptoms of no structural organic nervous disease were ever truly intermittent. For instance, the hemiplegic might show a greater degree of weakness one day than another, but he was hemiplegic nevertheless. Not so with functional nervous diseases. The most skilled specialist might not be able to tell that a given woman was accustomed to having convulsions, or that a vivacious lady would be prostrated with a headache next day. One was no more likely to find a structural change to account for these facts than to find the structural anatomy of cupidity or benevolence. A truly intermittent disease could have no organic basis in the nervous system. Functional nervous diseases, including epilepsy, were due to afferent impressions. If a tumor within the skull caused epilepsy, it was by an afferent impression, as much as if the afferent impression came from the presence of a tapeworm in the intestine. If the disease manifestations were not intermittent, the presumption was that the case was one of organic disease.

Seeking a Toxic Cause.—Affirming that there were purely functional nervous disorders, without any organic change in the nerves, sufficient even to sometimes prove fatal, what, he asked, were the causes? One direction to which he called attention was that of toxic agents developed within the system—a chemical cause. An example was given in which the chief improvement in the patient's condition resulted from diet. The author went on to quote from different chemists and physiologists proving the development of toxic agents in the intestine, urine, etc., agents which produced effects like those of morphine, quinine, etc. Many of them were capable of causing headache, muscular languor, depression of the heart, great depression of spirits, lowering of the temperature, and convulsions. Usually we were protected from self-poisoning through the function of the liver, and among the most efficient antiseptics were the digestive juices of the alimentary tract. This double function of the digestive juices was too often overlooked in combating disease. Derangement of the stomach and bowels, of a direct or reflex nature, he thought preceded the development of the hysterical status in the majority of cases. He had had better success in the treatment of hysteria by medication directed to the alimentary canal for the prevention of toxæmia, than he had ever before obtained from the use of old-fashioned antispasmodics. The same was true, in the main, of migraine. The same principle applied largely to the treatment of epilepsy, but he reserved the elaboration of this idea for a future occasion. —*The American Lancet.*

IS THE GASTRIC JUICE A GERMICIDE?

Drs. Straus and Wurtz have conducted a series of experiments in order to ascertain the action of the gastric juice on the bacilli of tubercle, charbon, typhoid and cholera morbus. The juice from man, dogs and sheep was selected for the experiments. It was found that digestion for a few hours at a temperature of 100° F. destroyed all the germs. The bacillus anthracis was killed in half an hour, the bacillus of typhoid and cholera in under three hours, whilst the bacillus of tubercle bore digestion for six hours, under which time it was still capable of provoking general tubercular infection. Even when digested for from eight to twelve hours the bacillus was still capable of producing a local tubercular abscess, not followed by general infection. Over twelve hours' digestion destroyed it completely. The germicide influence of gastic juice appears to be due to its acid contents, as it was found that hydrochloric acid alone, dissolved in water in the same proportion as it is in gastric juice, proved as active a destroyer of the bacilli. The pepsin appears to have no influence on the germs. MM. Straus

and Wurtz, who publish their researches in *Archives de Médicine Expérimentales*, wisely remind their readers that the germs, when protected by animal and vegetable tissues and introduced into the stomach in ordinary nutrition, are not exposed to so direct and prolonged action of the acid constituents of the gastric juice as in these experiments.

A SERIES OF LECTURES.

The Société de Médecine Pratique, which is one of the oldest medical societies in Paris, has started a series of public lectures on different hygienic subjects, to which the laity, as well as members of the profession, are admitted. The lectures will be delivered weekly by different lecturers, and will be continued to the end of April next. Dr. Dujardin-Beaumetz opened the series by a most interesting lecture on vegetable diet, which was well appreciated by a large audience. He began by showing that it was possible to live exclusively on vegetables, even in a rigorous climate (as exemplified by the inhabitants of Auvergne and of Brittany, where the poorer classes live on scarcely anything else), if milk, cheese and eggs were added. The vegetable diet might be beneficial in defective action of the kidneys or of the digestive canal, in dilatation or other disorders of the stomach, in putrid diarrhœa, or in all maladies characterized by hyperacidity. But while the vegetable diet rendered great service in therapeutics, man was omnivorous, and it was evident that he should suit his diet to climate and necessity.—*The Lancet.*

THE NINETEENTH CONGRESS OF SURGEONS.

The nineteenth Congress of Surgeons is to sit in Berlin in Easter week. It will be opened at noon on April 9th, in the great hall of the university, in which the afternoon sittings will also be held. The morning sittings, which will be devoted to the demonstration of preparations and the exhibition of patients, will be held from 10 till 1 in the University Hospital. Announcements of lectures, etc., should be addressed to Geheimrath Professor Gurlt, who is permanent secretary. On the first day Kappeler, of Münster, will speak on "Ether and Chloroform Narcosis," and Brauns, of Tübingen, on the "Treatment of Tuberculous Joint and Gravitation Abscesses by Injections of Iodoform." The committee will report on the present state of the Langenbeck House project, and the successful acquisition of a site for it.

SPECIAL RATES TO BERLIN.

Those who purpose to attend the International Congress in Berlin may find it for their interest to confer with Dr. Robert Newman, No. 68 W. Thirty-sixth St., New York City, who, with the concurrence of the special committee of the American Medical Association, has been able to secure favorable rates for transportation.

MENTAL ABERRATION IN PARIS.

Dr. Paul Garnier, in a report addressed to the Society of Medical Jurisprudence, has brought to notice the alarming increase of cases of mental aberration that occur in Paris. In the last fifteen years this increase has been more than 30 per cent. The principal causes of the increase of insanity are, according to the author, alcoholism and excessive intellectual work. Mental aberration is a little more common in men than in women. The proportion is fifty-six men and forty-four women out of one hundred lunatics, but this proportion tends to be equalized, as the progression of insanity is more rapid for the female sex than for the male.—Paris Corr. *Boston Medical and Surgical Journal.*

THE BERLIN INTERNATIONAL CONGRESS.

The General Secretary of the Berlin International Congress states that reductions in fares have been arranged for Americans who attend the Congress, through the agency of Brasch and Rothenstein, of Berlin, and of the Hamburg American Packet Steamship Company. The reductions will even be found to apply to travel on this side of the Atlantic. The assistance of the firm named will be given gratuitously to any member of the Congress who may apply to them for particulars as to expenses, routes of travel, and European excursions supplementary to the convention.

IMMUNITY.

During the work of the late Chloroform Commission in India, it is said that while the attendants were attempting to administer spirits of wine to a strong pariah dog, he became excited and struggled violently. None of the assistants could manage him. Dr. Lauder Brunton then approached the dog, who flew at him and bit him severely on the wrist, yet he seized him, held him down, and administered the dose. When he released the dog, the wrist was bleeding from two wounds. Everyone was alarmed, not only at the accident but at its terrible possibilities. "It does not matter," he quietly remarked as he held out his hand to be dressed, "I was accidentally inoculated some twelve years since, hence there is little or no danger."

DEATH OF DR. WM. S. MILNOR.

Dr. Wm. S. Milnor, late Resident Physician at the Philadelphia Hospital, died after a lingering illness superinduced by la grippe. It began with an inflammatory rheumatic affection of the knee-joint, and ended in a pyo-pericarditis. He was attended by Drs. Musser, Pepper and Guiteras. As soon as the latter trouble was recognized the pericardium was aspirated and eight ounces of purulent fluid withdrawn. Upon consultation it was deemed advisable to cut down upon the serous membrane of the heart and insert in its cavity a drainage tube. Dr. John B. Weaver, of this city, did the operation. Dr. Milnor survived for three weeks, dying finally from general exhaustion and degeneration of the heart muscle.

LA GRIPPE is greatly on the decrease in Philadelphia. Most of the large manufactories, etc., are now able to resume work with a full force of help, which a few weeks ago was impossible owing to the then prevailing epidemic.

PRACTICAL NOTES.

RECOVERY AFTER A WEEK'S TOTAL ANURIA.

At a meeting of the Medical Society of the Paris Hospitals on the 14th ult., M. Féréol related a case of a man who, having inherited gout, had on two occasions within the past two months had attacks of suppression of the urine lasting twenty-four hours, preceded by lumbar pains and hæmaturia, and followed by the emission of clear non-albuminous urine and a small calculus. A third attack had lasted for eight days, and during that week he had only passed a few drops of urine. Then the anuria ceased abruptly, and within twenty-four hours he had passed ten litres of watery urine containing 1.4 per cent. of urea, or 170 grammes in twenty-four hours. At the same time he passed a uric acid calculus the size of a pea and several smaller ones. During the week of anuria he had only slight pain in the right side, and the bladder was empty. But there had been evidence of uræmia, as during the last two days there was slowing of pulse to 52, lowering of temperature (37°) in the rectum, mydriasis, and a "subjective sensation of an ammoniacal odor in the urine." The treatment consisted in dry cupping to the loins, electrical applications night and morning, inhalations of fifteen litres of oxygen daily, one litre and a half of milk, half a litre of Vichy water, and half a litre of an alkaline water and Beaujon's diuretic potion; on the sixth day a bath lasting fifteen minutes, on the seventh day a purgative, and on the morning of the eighth day thirty centigrammes of caffein. M. Féréol did not think that the suppression was due to there being only one functionally active kidney, but rather that the passage and impaction of the calculus had caused a reflex inhibition of the secretion from the uninvolved organ. The quantity of urine afterwards evacuated was opposed to the first-named hypothesis. Urea must have accumulated in the blood, for the skin was dry and the bowels confined, except for a watery evacuation following the purgative. Sixteen days later the patient was in fair health save for slight lumbar pain and the daily passage of uric-acid gravel. M. Royet mentioned a case, also a gouty subject, eighty years old, in whom a large number of calculi lodged in the ureter without uræmia or anuria; when the calculi were passed he had successive attacks of anuria, none of which exceeded thirty-six hours. M. Hayem thought the case was opposed to the generally accepted view that an adult secretes in three days enough urinary poison to kill him. Roberts has said that myosis is characteristic of uræmia from suppression, not mydriasis, as in M. Féréol's case. If the amount of potash had been estimated in the urine following the anuria, it would have been possible to test the opinion of Voit, Feltz, and Ritter, who say that the toxic quality of urine is proportionate to the richness in potash salts.

MENSTRUATION AND LACTATION.

The influence of menstruation upon lactation has long been empirically observed. Schlichter brought before the Medical Society of Vienna the results of his scientific study of this subject. At first an average of the constituent of milk in three wet nurses was obtained by careful observation and measurements. Then fifty-two wet nurses were observed during and after menstruation. During a total of two hundred and thirty-three days of menstruation it was discovered that the fluctuations in the quality of the casein, fat, sugar, and other constituents—were less than the normal daily fluctuations. As the clinical observation of the infants did not bring out any decided change, and as some of these even gained weight on milk furnished by menstruating nurses, the author felt justified in opposing the generally accepted view that menstruation occurring after the lapse of six weeks exercises an injurious effect upon the infant, and that the occasionally observed disturbances of digestion in such infants are attributable to ordinary causes. If menstruation occurs prior to the sixth week, or if it is profuse, the nursling suffer distinctly. —*Times and Register.*

TO PRACTISE DEEP BREATHING.

1. Stand erect, the feet separated, the right slightly in advance. 2. Shoulders and head in natural position. 3. Hands lying lightly on the abdomen, the fingers pointing to the umbilicus. Compliance with this rule enables the child to be sure she is using the abdominal as well as the pectoral muscles in respiration. 4. Empty the lungs of air, then close the mouth. 5. Inhale slowly through the nostrils, using abdominal as well as chest muscles. The lungs thus receive the utmost possible amount of pure oxygen and muscles have exercise. 6. Hold the breath as long as possible, and meanwhile use the ordinary calisthenic exercises. 7. Never exercise except with the chest well expanded with air. 8. Exhale slowly, enunciating the vowel sounds as the air passes the lips.

A test for the purity of drinking-water is given as follows by Prof. Angell of the Michigan University: "Dissolve about half a tea-spoonful of the purest white sugar in a pint bottle completely full of water to be tested, tightly stopped; expose it to daylight and a temperature up to 70 degrees Fahr. After a day or two examine, holding the bottle against something black, for floating specks, which will betray the presence of organic matter in considerable proportion."

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

Section on Theory and Practice of Medicine.

R. C. M. PAGE, M.D., CHAIRMAN.

DR. WALTER MENDELSON read a paper on

THE PHYSIOLOGICAL TREATMENT OF OBESITY.

Experience had shown, he said, that under ordinary circumstances and in the temperate zone health is best preserved when the diet consists of a combination of all three of the classes of foods, nitrogenous, carbo-hydrates and hydro-carbons, and that the average proportion of the albuminous to the non-albuminous foods is about 1 to 3½ or 4. The most recent authorities, such as Peltenhofer and Voit, had demonstrated that the albumen of the food is the principal source of the fat found in the body, their investigations having shown that this albumen undergoes, after it has reached the cells of the tissues, certain chemical changes, by which part of it is converted into fat and part goes to the direct nutriment of the tissue cells. It was undoubtedly true that a certain amount of the fat taken as food is stored up; but the increase of body fat occurring after eating much fat—though in part a direct result—was chiefly brought about indirectly, the food fat shielding from oxidation that which had been formed from the albumen ingested. It was in the same indirect manner that the carbo-hydrates acted. Ordinarily the starches and sugars were not themselves converted into fat; only when taken as food along with albumen did this seem to occur. But when taken as food along with albumen, they, being more easily oxidizable than the tissue fat, by preventing the latter from being consumed, gave rise to an accumulation. There were, then, three sources from which fat might be derived for the body: (1) From that resulting from the splitting up of the albumen of the food; (2) from the transfer of that fat ingested as food, and (3) probably from fat formed from starches and sugars when these are taken in large quantities.

In the treatment of obesity, he said, we must consider the individuality of the patient and use great care to suitably regulate the diet and exercise, having in mind that the change we wish to bring about, to be beneficial, must be gradual; that the cells must be educated by degrees to the new duties we wish them to perform, and that anything approaching starvation—like the Banting cure—is to be condemned. With regard to diet, he went on to say, it must be our general plan to give much albumen and relatively little non-nitrogenous food, doing this in order, firstly, that the cells, from the abundance of nourishment brought to them, shall be capable of great chemical activity; and, secondly, that the tissue fat thus necessarily formed shall not be preserved from oxidation by the presence of the more readily oxidizable food fat and starches. We should always keep in mind, however, that as the fat of the body becomes by this process gradually reduced, the diet must undergo a corresponding change, more and more of the non-nitrogenous foods being allowed as the body grows relatively richer in albumen and poorer in fat; for unless this be done, a point will be reached where not only the fat of the body, but the albumen as well, will be consumed, and the patient, after feeding thus on his own muscular and glandular tissues, will begin to complain of weakness and lassitude. It is important to remember that the patient should always feel better, never worse, under treatment, and that the desired change cannot be brought about quickly. All reforms, to be lasting and beneficial, must be slow in action and the result of education; they must be a growth from within, and not an impress from without.

DR. L. F. BRYSON read a paper on

THE PRESENT EPIDEMIC OF INFLUENZA.

In the discussion on it Dr. C. L. DANA said that the journals had told us that the epidemic began in St. Petersburg about the middle of November, and he believed it was about the middle of December that the disease made its appearance in New York. In his experience the whole course of this affection showed conclusively that it must be due to an infectious germ. If we could draw any conclusions from analogy, influenza, like other specific diseases, was caused by a specific microbe of some form or other; but if this was the case, it was manifestly impossible for such a contagium to travel from St. Petersburg to New York in the short space of one month. In order to accomplish this feat it would have to be a much more rapid traveler than any known form of contagion. We were, therefore, forced to a second conclusion, viz: that the germ has been in this country. The microbe of influenza was not a thing borne by the wind or carried by individuals, as the cholera germ was, but it was distributed throughout the world.

There seemed to be further concerned in the production of the disease some epidemic influence, whether telluric, electric, or what not, although the speculations on this point had not as yet proved very fruitful. He understood that in Vienna it had been claimed that the specific microbe of la grippe had been found, though it had not as yet been found to be capable of reproducing the disease. He did not believe, however, that this important discovery had yet been made.

He then proceeded to speak of his own experience as regards the nervous manifestations of the present epidemic. A Russian authority, he said,

had divided the cases into three classes, nervous, catarrhal and gastric. As far as he had been able to learn, the catarrhal and gastric varieties had been met with here, but the purely nervous form did not seem to have appeared, or at least to any noticeable extent. He had met with one case in which there was no chill (though some chilly feelings) or fever, and no catarrhal trouble, but in which almost the only symptom was excessive weakness. He had seen one patient in whom mania appeared after grippe, and another in whom encephalitis developed. In the newspapers, also, several cases had been reported in which mania accompanied the disease. In one case which he saw facial paralysis occurred, and in a child there were symptoms of poliomyelitis. He believed that in this instance, however, there was nothing more than a congestion of the spinal cord, caused by the epidemic influence. He had met with a good many cases of facial neuralgia, but they all seemed to be associated with the affection of the nasal passages. The most characteristic phenomenon of the epidemic was the prostration so commonly met with, and this he believed to be the effect of the specific poison of the disease upon the heart, as was the case in other zymotic affections.

Dr. W. P. Northrup spoke of the ages of the patients attacked. In the New York Foundling Asylum, where there were between 700 and 800 inmates, not a single diagnosis of influenza had been made among the children under 2 years of age. Some of them, which were net-nursed by women suffering from the disease, fell away a little, and occasionally there was a moderate attack of diarrhœa among them; but this was all. Among the "run-abouts," however, children from 3 to 5 years of age, something like 15 or 20 per cent. suffered. The attack was usually characterized by moderate febrile movement and more or less bronchitis, but all the children rapidly and completely recovered. Almost the entire number of those affected came down with the disease within the space of two or three days. After that there were but two or three sporadic cases. It was noticeable that there were more than the usual number of pneumonias in the house at this season of the year; but, on the other hand, the disease was less fatal than usual.

Among the adults in the establishment who were affected with influenza all the severe cases occurred in those between the ages of 18 and 25. Of the entire number of inmates who were from 2 to 25 years of age about 80 per cent. had the disease, though many of the cases were very mild. In one case there was a well marked erythematous eruption. In this instance the temperature rose to 103°, there was green vomiting and ærgina, and the whole attack closely resembled scarlet fever. Among the young women there were several severe cases of pneumonia and one case of Bright's disease. One curious feature about the epidemic in the Foundling Asylum was that all the wards were visited by it except one. In this ward there were sixteen "run-abouts," six nurses and numerous infants, but not a single case occurred there, although there were many cases in the wards just above and below it. It was also worthy of note that in the fraternity none of the pregnant women were attacked.

Out of fifty-two old ladies at a Home where Dr. Northrup attends only two suffered from the influenza. These two cases were of moderate severity, but typical in character. Among the attendants at this institution six out of fourteen had the disease and were quite ill with it. In private practice he had seen one case with the eruption. It was a papular erythema, symmetrical on the two sides of the body, and attended with much itching and burning.

As to the treatment, he desired to say that he had not used one grain of antipyrin among his patients. The reason for this was the unfortunate experience which he had once had with this remedy. In this instance he prescribed 15 grs. of the drug, and it produced extreme depression, so that the patient became pulseless, and he was much alarmed. Notwithstanding this untoward effect, the patient was willing to take 5 grs. of antipyrin afterward, and in this quantity it gave rise to a troublesome and painful urticaria and to such distressing dyspnœa as he had never seen except in occasional cases of Bright's disease.

Dr. T. R. Pooley said that he had himself been affected with the disease, and when the attack came on he took great interest in studying the eye symptoms, which he learned afterwards were such as were frequently met with in the epidemic. There was a deep-seated sense of pain in the orbit, and the movements of the eye were accompanied with much pain. There was also very marked asthenopia. The symptoms referred to were only transient, and it had not yet been shown that any permanent disease of the eye ensued. He supposed the trouble to be simply a weakening of the ocular muscles, such as was met in other diseases producing exhaustion. He had met with only one or two cases in which the conjunctiva was affected, and in these he thought it very possible that the patients had had catarrhal conjunctivitis before they were taken with the influenza.

He had of late seen an unusual number of cases of acute inflammation of the middle ear, and they all seemed to be attributable to the effect of the epidemic and to be connected with catarrhal inflammation of the throat and air passages. In most cases examination showed hyperæmia of the drum head, and in some instances there was perforation of the latter.

Dr. O. D. Pomeroy said that he had met with a larger number of cases of ear trouble than of

eye trouble as a result of the influenza. Both these classes of affections seemed to occur some little time after the disease had spent its force. At the Manhattan Eye and Ear Hospital he had seen six or seven cases of catarrhal conjunctivitis, and one case of very severe ulceration of the cornea. In one case not in his own clinic there was complete ecchymosis of both eyes, such as was sometimes observed in whooping-cough, where it was no doubt due to rupture of the blood-vessels from the violence of the cough. In the case in question also the patient suffered very greatly from cough. All the principal symptoms noted by Dr. Pooley had likewise been observed by himself.

As regards the ear, purulent otitis of an acute character was quite common. In this the discharge was very great, and spontaneous rupture of the drum head not infrequently occurred. The purulent cases were about twice as numerous as the catarrhal ones. The former were apt to be very violent in character, and in one instance he had met with there was mastoid peritonitis. The ear symptoms seemed on the whole to be more frequent and of a graver character than was the case in scarlet fever; and they are all probably caused by the spreading of an inflammatory process from the throat through the Eustachian tube, and thus affecting the middle ear.

In answer to a question by the chairman, DR. FRANCIS DELAFIELD said that he supposed every one had been struck with the frequency with which both bronchitis and pneumonia had occurred in the epidemic. As regards the bronchitis there were two things which had repeatedly attracted his attention. The first was the very satisfactory way in which the apparently very bad cases got well. Often there was great difficulty of breathing, with considerable rise of temperature, and expectoration of blood as well as mucus. Yet he had been surprised to see how well such patients had done, and in what a comparatively short time improvement began to take place. The second point was the number of individuals who, while they had a general bronchitis as far as the large tubes were concerned and localized bronchitis involving the smaller tubes, remained free from any implication of the lung tunic. This class also, in his experience, had done well.

As to pneumonia, he thought that every one must have been impressed with the fact that almost all those who were attacked by it had a great deal of bronchitis with the pneumonia. In these cases of pneumonia there was a considerable difference, and he had observed altogether four classes.

In the first the cases were very mild. The temperature did not run high, and there was very little dulness on percussion. There were some subcrepitant râles over a portion of the lung; but these cleared up within a few days.

In the second class of cases the patients did not seem to be very ill, and did not have a very high temperature, but they had considerable bronchitis and perfectly well marked consolidation of one lobe for one or two weeks; after which they got well.

The third class was composed of those which had fully developed pulmonary consolidation which went on for quite a long time. The temperature rose perhaps to 104, and did not go down. After ten, or even twenty days, it would still be found that the consolidation had not cleared up. In many instances, however, even after this very long period, the lung did clear up, and the patient got well.

The fourth class was made up of the very bad cases. In most of them, together with the pneumonia, there were evidences of a great deal of bronchitis. The action of the heart was poor, and there were collections of blood in the veins. When this condition had been established the heart's action was rapid and feeble, and expectoration became suppressed. Such patients seemed to do badly, no matter what course of treatment was pursued. Some seemed to be relieved for a day or two, and then the grave symptoms all came back again. In a smaller number death occurred as in ordinary lobar pneumonia.

DR. LOCKWOOD spoke of the great usefulness of antipyrin in relieving the neuralgic pains so constantly met with in grippe, and stated that for the cough he had found muriate of ammonia, in combination with other remedies, of the greatest service.

DR. WOOD said that he thought a note of warning ought to be given in regard to the use of antipyrin. This, he was convinced, was an agent which was quite capable of complicating the disease very seriously a little later on in its progress, if it did not at the outset. Its administration was apt to be followed by cold perspiration and a relaxed condition, and if much bronchitis were present it was liable to produce great depression unless employed with extreme caution.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Dr. Gautier on the Properties of Cod Liver Oil—Dr. Leudet on Phthisis—The Non-Operative Treatment of Anal Fistula—Cure of Intestinal Occlusion by Enemata of Sulphuric Ether.

At a recent meeting of the Academy of Medicine Dr. Gautier read a note on the properties of cod liver oil, and the following are the principal conclusions: 1. It is certain that it is not only to the alkaloids and to the morrhuic acids that

the cod liver oil contains that is due its undeniable reparative activity. 2. It acts by its fatty substances, which are very easily assimilable, thanks to their slight acidity, to their partial saponification, and to the dissolution in the oil, to a certain quantity, of biliary matters, which render it extremely easy to form an emulsion, particularly when in contact with the ferments of the pancreas. These fatty substances, so easy of digestion, ready to be assimilated, are protective agents, forming reserves to be accumulated in certain tissues and to be utilized by the economy, which, to meet its incessant wants of calorification, borrows the heat which is necessary for the destruction of the materials of the cells. 3. These oils act as energetic repairers by their richness in phosphates, in phospho-glyceric acid, in lecithine and in phosphorus, combined or in an organic state. It is in this latter form that the economy assimilates more easily this indispensable aliment, which presides over the perpetual renovation of the tissues. It is known that in phthisical, scrofulous and rachitic subjects, as well as in cachexia, the disassimilation of the salts of lime, and principally the calcic phosphates employed by these patients, cod liver oil furnishes them an incessant provision of phosphorus under the form in which it exists in milk, the yolk of egg, the brain legumine, caseine; that is to say, in the same state in which it can be directly utilized and assimilated by the organism. 4. In fine, these oils of the cod's liver, by their alkaloids, the most important of which is morrhuine, and by morrhuic acid, excite the nervous system, accelerate denutrition, increase considerably the quantity of urine and of the perspiration excreted, and increase the appetite, as has been experimentally demonstrated. 5. It is true that among the alkaloids of cod liver oil there are some—amylamine, for example—which are dangerous poisons. The causes of the efficacy of cod liver oil may, therefore, be summed up thus: Sensible augmentation of the appetite and of the renal, endoral and intestinal secretions under the influence of its principal alkaloids; rapid assimilation of phosphoric principles presented to the economy under the form of lecithine and other organic phosphatic matters directly utilizable by the young cells; powerful reparation of the reserves of calorification, thanks to the easy absorption of fatty substances.

In a note read by Dr. Lœudet at the Medical Society of Hospitals on phthisis, regarded as a hereditary and contagious disease, the author brought to notice the remarkable fact that phthisical subjects supported the influenza better than others. At this time of the year, however, they furnish an important contingent in the general mortality. According to Dr. Lagneau, 21 per cent. of the total number of deaths in Paris during the year 1888 may be attributed to tuberculosis. The same report shows the number of young men of the departments of Var and of the Bouches du Rhone who are exempted from military service on account of diseases of the chest or of weakness of the constitution. This number is double that of the other departments, and consequently it becomes urgent to examine whether the consumptive subjects who pass their winter on the shores of the Mediterranean are not infecting the inhabitants. Dr. Lœudet believes, on the contrary, that the cases of contagion of tuberculosis are extremely rare. Dr. Vallin is of opinion that with the facts published to the present time it is difficult to say how much the development of tuberculosis is due to heredity, and how much to contagion.

Professor Guyon lately read a paper before the Société de Chirurgie on the non-operative treatment of anal fistula. The author advises that fistulæ which do not give rise to distressing symptoms ought not to be operated upon. The non-operative treatment consists in rendering the stools soft and regular, and in insisting upon scrupulous cleanliness. The constitutional treatment consists in the administration of iron associated with the bromides, and he recommends the following formula: Potassii bromid, 10 grams: fer. ammon. cit., 50 centigrams: syrup aurant, 100 grams. One tablespoonful to be taken twice a day. After each motion one of the following suppositories should be introduced into the rectum: Iodoform, 10 centigrams; ext. belladon., 2 centigrams; ol. theobrom., 180 centigrams.

Before the Therapeutic Society Dr. Clausi gave an account of two cases of intestinal occlusion cured by enemata of sulphuric ether, after having unsuccessfully tried all the other means habitually employed in these cases. The following was the author's mode of procedure: After having dissolved 10 grams of ether in alcohol and having added to it 300 grams of distilled fennel water, he introduced into the rectum, as high up as possible, an elastic tube, and then, with an ordinary syringe, he injected the liquid into the intestine. The patients experienced a painful sensation of heat diffused all over the abdomen, and almost immediately after they had returns from the stomach having the characteristic odor of ether. In a short time this was followed by abundant evacuations of fæcal matter, with the disappearance of the colicky pains and all the other morbid manifestations. The criterion which guided the author to employ sulphuric ether was founded on its physical and physiological properties, which rendered it as a means very efficacious to excite the peristaltic movements of the intestine, an essential condition to overcome an occlusion: and this, either because it directly excites the terminations of the motor nerves of the intestine, or because, having its point of ebullition at 35° C., the internal tem-

perature of the body, the ether should pass rapidly to a state of vapor with a great force of tension; and in producing the sudden and rapid distension of the intestine it is obliged to act by contraction, and can thus overcome the obstacle which opposes the free passage of the fæcal matter.

DOMESTIC CORRESPONDENCE.

Audi Alteram Partem.

The Climatic Causation of Consumption.

To the Editor:—I have been anxious to read Dr. Baker's paper upon "Climatic Causation of Consumption" ever since I first heard about it. At Newport, during the last meeting of the Association, a friend saluted me with "Doctor, your avocation is *busted*. Go home and take down your shingle, Baker, of Michigan, has just read a paper proving that consumption is caused by *cold, dry air*." Now, it is not because of any fear of this jocose prediction being realized that I am writing to you, but for the reason that I was kept from hearing Dr. Baker's views by having to read a paper myself in another Section. I suppose my medical friend has voiced the expectation of others who know me that I would answer such an argument, coming from one who has both time and statistical data at his command for purposes of classification, as no one else has in America, because I have repeatedly taken the opposite ground in medical papers I have written.[1] This much by way of explanation. I would have presented the following objections to part of the paper mentioned had I been present at its reading. To a resident of Colorado it seems absurd that the English language can be so twisted as to seem to fairly indicate the conclusion that *cold dry air* is the cause of what we know in thousands of cases it has cured, namely, consumption; yet here it is in the last issue of your Journal, January 18th, "The Climatic Causation of Consumption," by Henry B. Baker, M.D. The new theory is sandwiched in between the Bowditch and Buchanan soil moisture cause, and the Koch tuberculer bacilli idea, and made to harmonize with Dr. B.'s conclusions by means of an extensive array of statistics, which I simply believe are misapplied.

Lack of time compels me to forego the elaboration of the objections which occurred to me as I yesterday for the first time read this paper. I do not refer to the other two causative influences mentioned, which are generally accepted as proven, but to Dr. Baker's peculiar ideas, including the suction of chlorides towards the lungs in pneumonia *by cold dry air*, I can only summarize my points.

Firstly, and here lies the fault of his second conclusion that cold dry air can cause consumption. Is it not an assumption, as a premise of what follows, to throw out *relative humidity*, as Dr. Baker does, and to consider *absolute humidity* alone? I have thought myself a defender of *absolute humidity*, and in the rating of it with relative humidity and cloudiness of the air, to illustrate the shades of moisture and dryness on my climatic charts.[2] I considered that I had been amply generous in giving it a little more than a third of the combined rating influence. This total annihilation of relative humidity, however, which we have now to deal with, is an arbitrary proceeding which invalidates every after conclusion depending upon such a premise. For if the air is dry because it is cold, even though it is produced by the damp emanations from a saturated soil, as Dr. Baker puts it, "Realizing the fact that over the *low wet soil* there is generally a *cold dry atmosphere*," then why cannot the term "dry" by given to a London fog, the air of the Mammoth Cave (58° F.), or any other kind of atmosphere this side of a Russian bath? One can prove anything if relative humidity is left out. According to our author, any air that is of low actual weight of moisture to the cubic foot is "dry." Are not things what they seem? Has not the sensational effect of cold increased, as we all know it is, by high relative humidity, any place whatever in this consideration?

Secondly, Is it not an assumption to conclude that because the death-rate from consumption and exudative lung diseases is increased after or with cold weather, that the cold was the direct cause of this? Personally I feel like combatting the universal idea that we *catch cold*, and to claim that we always *catch hot* first. It is an everyday experience with everybody that the relaxation due to fatigue, over-exertion, low-resisting state or heat which renders the subsequent exposure to *cold* dangerous. It is sufficient simply to ask this question—was it not an indirect effect only of cold that drove people *indoors* where in confinement they suffered the carbonic acid poisoning, defective elimination and tubercular infection which largely contributed to the increased mortality mentioned, and which never could have happened in the *cold out door air*? In this regard the doctor's classification of small-pox with consumption is most unfortunate for his theory of the causation of the latter disease; for do we not all know, from whatever of experience we may have, that the contagiousness of small-pox is favored above all other means by the close and

[1] "Rocky Mountain Health Resorts," Houghton, Mifflin & Co., Boston; "Moisture and Dryness," Report to American Climatological Assn., 1884, Rand, McNally & Co.; "The Preferable Climate for Consumption," from Transactions of the Ninth International Congress; reprinted by the Colorado Legislature (copies furnished an application to Secy. State Board of Emigration, Denver, Col.)

[2] "The Annual and Seasonal Climatic Charts of the United States," Rand, McNally & Co., Chicago, Publishers.

heated apartments of the poor? In illustration, an epidemic of small-pox a year ago made its way to different habitations in Denver from a certain gambling room, where some infected tramps from a neighboring city tarried. Does anybody pretend to say that moist cold or dry cold air had any other than an indirect causative effect in spreading that small-pox?

Thirdly, Is it not obviously unreasonable to exclude from this consideration the remarkable effect cold has upon the extended cutaneous surface of the body? May not the revulsive influence of cold *on* the body account for as much or more than the effect of cold *in* the lungs? Yet there is nothing in this extensive analysis of the influence of cold except reference to effects *within* the lungs. The only way I can account for this important omission is the author's statement, "It seems to be difficult for the human mind to grasp more than one idea at a time."

Fourthly, Is not the effect of Dr. Baker's so-called *dry cold* air upon pulmonary tissues overstrained when a suction power is attributed to it sufficient to draw the chlorides into the exuded deposits characteristic of croupous pneumonia and thus account for the absence of these chlorides in the urine? 1. Because such supposed power of cold dry air is not constant or ever present in acute pulmonary affections. 2. Because the behavior of the chlorides in pneumonia does not have to be explained in this peculiar way. 3. Because croupous pneumonia is most likely an infectious disease depending upon a malarious element in the air or in the patient's blood, for its peculiar manifestations, perhaps even for the behavior of the chlorides. 4. Because the statistics of deaths from croupous pneumonia, could they be obtained, would overwhelmingly show that really dry sections (relatively as well as absolutely dry, such as found at high altitudes), would give less than one tenth the mortality of warm moist localities. (See statistics of United States census for proof of this, notwithstanding the undoubted fact that in those statistics catarrhal and intustitial pneumonias, bronch. pneumonia, bronchitis and plenrisy complicate the pneumonia records.) If croupous pneumonia is infectious, its causation of course cannot then be explained by this mis-called *cold dry air*. 5. Because the inhaled atmosphere could not reach the ærating portions of the lungs as *cold dry air* to have the peculiar effects attributed to it. In ordinary breathing the ratio of inhaled air to that already contained in the lungs is not much if any more than 10 per cent. and the process of heating and mixing these currents of air is both constant and rapid. The remarkable transpiration of moisture from the lungs in really cold dry air[3] is not only a constant effect in bronchitis, catarrhal and intustitial pneumonia as well as in health and in croupous pneumonia, but in chronic infiltrations and slight tubercular lung lesions it is believed to be curative by every physician of any ability in this part of the country from Wyoming south to New Mexico. No doubt that where tubercularization is so localized or concealed that the curative cold dry air cannot reach the seat of the disease and thus can offer no check to its progress, that activity may be rather increased than diminished through the stimulation of both heart and lungs due to cold and elevation above the sea; and in these cases, as in phthisis in Florida and acute miliary tubuculous, should of course not be sent to high altitudes. The everyday experience of these physicians is so decidedly to the contrary that no further excuse is needed for refuting a statement like the following, quoted from Dr. Baker's article: "The specific cause of consumption apparently and probably finds lodgment in the lungs and air passages, other things being equal, in proportion to the coldness and *dryness* of the atmosphere; and not only this, but the danger of auto-infection and of death to one in whose body the disease is already present is increased by exposure in an atmosphere unusually *cold and dry*, while the condition of the blood is such that saline and albuminous exudates are liable to occur in the air passages."

While I have both respect and friendship for the author, I feel compelled to say the above statement is groundless, being based upon a false premise and consequently the resulting generalizations (3, 5 and 8) are not sound, that the conclusions are contrary to experience and for reasons herein stated do not appear to be established, as claimed, by the valuable statistical tables presented. CHARLES DENISON.

Denver, Col., Jan. 22, 1890.

NECROLOGY.

Edwin Arius Kilbourne, M.D.

Dr. Edwin Arius Kilbourne, Superintendent of the Illinois Northern Hospital for the Insane at Elgin, died February 27, 1890, at that place, in the fifty-third year of life. Born in Vermont, he was practicing dentistry and studying medicine at the opening of the war in 1861, and enlisted as a private, soon rising to the rank of Captain, and served a long term as Judge Advocate in the Courts Martial. After the war he resumed his medical studies, graduating from Ann Arbor and also from the College of Physicians and Surgeons of New York. For a long time he was assistant physician at the New York City Insane Asylum on Blackwell's Island, and made a short trip abroad, finally locating for the general practice of

[3] See tables 1 to 3 giving differences in moisture exhalation in *cold dry* as compared with *warm moist* atmospheres pages 4 and 5 in essay already mentioned, "The Preferable Climate for Consumption."

medicine in Aurora, Ill., and was shortly thereafter, in 1872, appointed Medical Superintendent of the Northern Hospital, a small portion of which was just completed and ready for patients. In this capacity he has been connected with that institution up to the time of his death, watching, directing and fostering its growth with a devotion and absorbing interest which did much to make him prematurely old and open for him an early grave. Under his stewardship the hospital has attained an enviable reputation as a well conducted and admirable institution of its sort. His spirit was essentially progressive, so that reforms in the management, treatment and care of the unfortunate class committed to his hands found in him an early advocate and exemplar. He was possessed of extraordinary executive ability, great force of character and, above all, a comprehension of details which did not permit him to take the least rest and led him often to unnecessary worry and anxiety. His interest in the hospital and all that concerned it, indeed, was his whole life, and to it he devoted the best years and energy of his career. He has reared up a reputation for unquestioned probity which will be a monument to his memory, a sacred inheritance to his children and a bright example for his successor.

A rigid disciplinarian, he never spared himself, and it was in visiting a county jail in February, 1884, that he incurred an illness from which he never fully recovered, and during the last year of his life broke down physically and mentally, fortunately never seeming to realize the great change that had come over him. The immediate cause of death was apoplexy. Strangely, a sister, who with himself were the sole remaining members of his father's large family, died in Iowa only three hours before his own death. A widow, two sons and a daughter survive him, abundantly provided for by his judicious investments and a large insurance.

Richard D. Lee, M.D.

Dr. Richard D. Lee, a physician of high standing in Harford County, Md., died in the midst of his daily tour of professional duty; he died in the harness, as the saying is. He was found dead, probably through heart failure, in his carriage in the public road, near Bell Air. He was a graduate of the Washington University School of Medicine in 1848.

MISCELLANY.

MISSOURI STATE MEDICAL ASSOCIATION.—The thirty-third annual meeting of the Medical Association of the State of Missouri will be held at Excelsior Springs, Clay county, Mo., May 6, 7 and 8, 1890.

(Signed) L. J. MATTHEWS, Pres't.
J. C. MULHALL,
JOSEPH SHARP, Secretaries.

LETTERS RECEIVED.

J. G. Waters, Topeka, Kan.; Dr. Paul L. Brick, Le Mars, Ia.; Dr. L. F. Mansfield, Watertown, N. Y.; Dr. Theodore Diller, Danville, Pa.; First National Bank Stanford, Ky.; Dr. D. B. St. John Roosa, New York; Dr. Carl Seiler, Philadelphia; R. L. Polk & Co., Chicago; Dr. J. R. Holgate, Castleton, Ill.; The Advertisers' Association, Elmira, N. Y.; Longmans, Green & Co., New York; Dr. W. B. Henderson, Pittsburgh, Pa.; Dr. J. Chancellor Gilbert, Wessington, S. D.; Dr. H. C. Neer, Park Ridge, N. J.; Dr. Geo. W. Hinkle, Harvard, Ia.; Dr. D. Bryson Delavan, New York; Dr. J. B. Maxwell, Chicago; Dr. C. C. Lapeer, Braymer, Mo.; Atlantic-Pacific Railway Tunnel Co., New York; Dr. J. Z. Gerhart, Harrisburg, Pa.; Paris Medicine Co., Paris, Tenn.; Reed & Carnrick, New York; Dr. A. R. Baker, Cleveland, O.; Dr. J. C. Wilson, Philadelphia; Dr. J. P. Henderson, Salem, Ind.; Dr. R. S. Anderson, Grove City, Ill.; Dr. C. F. Darnall, West Union, Ia.; Dr. A. W. Nelson, New London, Conn.; Dr. S. P. Deahofe, Potsdam, O.; Dr. G. F. Cook, Indianapolis, Ind.; Dr. I. R. Spooner, Lake Preston, S. Dak.; Dr. L. G. Webber, Jamaica Plains, Mass.; F. A. Davis, Philadelphia; F. W. Nostrand, New York; Parke, Davis & Co., Detroit, Mich.; Rigaud & Chapoteaux, Paris, France; Dr. T. L. Wright, Bellefontaine, O.; University of Wooster, Cleveland, O.; Dr. H. A. Smith, Cincinnati, O.; George F. Lasher, Philadelphia; Dr. N. V. Spicer, Quincy, O.; J. H. Bates, New York; Philadelphia Truss Co., Philadelphia; Ed. L. Huntly & Co., Chicago; Mrs. J. A. Gorgas, Rogers Park, Ill.; National Type-Writer Co., Boston; Dr. I. N. Love, St. Louis, Mo.; Jackson County Medical Society, Kansas City, Mo.; T. J. Van Horen & Co., New York; James O'Gorman, Baltimore, Md.; Dr. J. C. Fisher, Warsaw, N. Y.; Dr. F. A. Merrill, Boston; George Tiemann & Co., New York; Dr. P. R. Cortelyon, Marietta, Ga.; Dr. Llwellyn Eliot, Washington; C. W. Holmes, Elmira, N. Y.; Dr. E. L. Shurley, Detroit, Mich.; Dr. L. L. Radcliffe, Washington; Dr. D. N. Rankin, Allegheny, Pa.; Dr. H. C. Mooney, Laketon, Ind.; Dr. C. H. McClees, Marne, Ia.; Dr. N. S. Stair, Ft. Atkinson, Wis.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 8, 1890, to March 14, 1890.

Capt. J. Van R. Hoff, Asst. Surgeon, is granted leave of absence for one month. Par. 1, S. O. 26, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., March 5, 1890.

First Lieut. Edward R. Morris, Asst. Surgeon (Ft. Shaw, Mont.), is granted leave of absence for one month. Par. 1, S. O. 28, Hdqrs. Dept. of Dakota, St. Paul, Minn., March 7, 1890.

By direction of the Secretary of War, Capt. Junius L. Powell, Asst. Surgeon U. S. A., is relieved from duty at Ft. Supply, Ind. Ter., to take effect at the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. Randall, S. Dak., for duty at that post, and by letter to the commanding General, Dept. of Dakota. Par. 8, S. O. 56, A. G. O., March 8, 1890.

By direction of the Secretary of War, Capt. Rudolph G. Ebert, Asst. Surgeon, now on sick leave of absence, is relieved from duty at his present station, Ft. Pembina, N. D., and will report in person to the commanding officer, Angel Island, Cal., for duty at that station. Par. 1, S. O. 57, A. G. O., March 10, 1890.

Capt. W. B. Davis, Asst. Surgeon U. S. A., leave of absence for seven days granted by order No. 9, Ft. Preble, Me., March 7, 1890, is hereby extended ten days. Par. 6, S. O. 58, Div. of the Atlantic, March 12, 1890.

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ORIGINAL ARTICLES.

THE INFLUENCE OF SANITATION UPON OBSTETRICAL AND GYNECOLOGICAL SURGERY.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY THOMAS A. ASHBY, M.D.,

OF BALTIMORE,

FELLOW OF THE AMERICAN GYNECOLOGICAL SOCIETY, ETC.

It goes without saying that the age in which we live is one of immense progress. In whichever direction the eye is turned in the scientific field the evidences of an intelligent and untiring labor are presented. Contrast the status of scientific knowledge to-day with that of half a century ago and the immense gain in beneficent information and in useful fact is made apparent. In no department of scientific work is this gain more marked than in the domain of preventive medicine. Not only have the manifold causes of diseases been diligently and assiduously sought for and in numerous instances found, but astonishing progress has been made in the direction of preventing the spread of contagious influences and in modifying the effects of such influences when in actual force. The science of Sanitary Medicine has been revolutionized and reconstructed on a foundation of established principles. To the growth and evolution of these principles the entire practice of medicine and surgery now pays tribute. To the application of the principles of sanitation to professional work can be traced the largest results which have ever flown from a scientific doctrine.

It is not the purpose of this paper to attempt to trace the history of this progress in sanitary science, except in so far as it bears upon the special subject under discussion, viz., "The Influence of Sanitation upon Obstetrical and Gynecological Surgery." The object in view is to show the very important and beneficent effects which have resulted in obstetrical and gynecological surgery from the recognition and adoption of the principles of sanitary science, and how the further acceptance and enforcement of these principles will bring a larger measure of results than have as yet been witnessed. The scope of this subject will not admit of its brief discussion if the element of statistics is introduced at any length. An attempt will be made to treat the subject in as condensed a form as is possible, and to regard in a large and general way the lesson which may be learned from a philosophic view of the important facts under consideration.

Going back to the earliest history of medicine it will be observed that Hippocrates directed attention to the influence of air, water, diet, and clothing as factors in the causation of disease. From a general standpoint sanitation is as old as the records of the human race. In a more particular and special sense the growth of the important idea of sanitation is of very modern and recent date. The full influence of this idea has been made apparent in its best sense only within the past forty years. The birth of the modern principles of sanitation took place when Semmelweis demonstrated the influence of cadaveric poison upon the lying-in woman. The principle once established that the diseases of the puerperium originated in external influences the entire groundwork of the science of sanitation, as applied to obstetrical surgery, was relaid, and upon this foundation has been built the present superstructure. The results which have followed the recognition and observance of an external influence as an etiological factor have been so wide-reaching that the vast majority of diseased conditions are now referred to specific influences of external origin. The discovery of microörganisms and the establishment of the relation which they sustain to pathological states led the way to the successful study of specific influences. The essential principle in the causation and extension of disease was in this way traced to a specific factor, a *materies morbi* of recognizable aspect, of given demeanor, and of ascertainable character. Before the day of the microbe—when sanitary science was vaguely striking at imaginary etiological influences, at supposible miasms, at contagious principles lurking in the air, in clothing, in water, and in unseen places—the progress of sanitation was made only along lines of indirect observation. However earnestly attempts were made to destroy or intercept the march of the infectious and contagious principle such attempts were often futile in aim and reach in virtue of the

fact that the principle was an undetermined character and quantity, obedient to no established law and controllable by no power then possessed. Is it surprising that sanitary science was so long in rising to its present plane of usefulness to the animal world when one considers the difficulties which hampered its environment? Nor is it less surprising to witness the progress it has made since the time of Semmelweis when a new impetus was given to its growth by the discovery of the principle of septic origin of disease by the direct introduction of a septic process. In order that the influence of sanitation upon obstetric surgery may be shown in its most striking and truthful aspect I shall present the statistics of puerperal mortality of the present day in comparison with those prior to and at the time of Semmelweis.

That the ancients were familiar with the diseases of the puerperium, grouped under the generic term of puerperal fever, there can be little doubt. It is more than probable that the lying-in woman from the earliest period of human society has been subjected to its ravages. References to epidemics of puerperal fever are not frequent until after the latter half of the seventeenth century (about the year 1664). About this time and during the next hundred years it made inroads upon the lying-in hospitals in Europe to an apalling extent. It prevailed in London during the years 1760, 1768 and 1770 to such a degree that nearly every woman confined in lying-in hospitals perished. A similar epidemic occurred in Edinburgh Infirmary in 1773 and it is stated that almost every woman as soon as delivered was seized with the disease and "all of them perished." In a number of different years it prevailed in the Maison d' Accouchement of Paris to such an extent that one woman out of three delivered died. In the lying-in hospital of Vienna in 1823, 19 per cent. of the women delivered in the institution perished, and in 1842 the mortality was as high as 16 per cent. The epidemic waves of puerperal fever which swept over Europe are said to have destroyed nearly as many lives as small-pox and cholera. In our own country we have not been without such epidemics, but in consequence of the fact that the lying-in institutions in America are of comparatively recent date statistics have not accumulated to the same extent as in Europe. Lusk estimates the mortality from puerperal fever in New York City from 1868 to 1875 as 1-146, The mortality from child-bed in the same city during the latter year reached the total of 420, from which it is fair to assume a large percentage as a result of diseases of the puerperium. During the year 1872, in the same city, the mortality reached a total of 502, the larger percentage being due to increase in cases of metria, those from ordinary accidents remaining nearly the same as in the previous year. During this year epidemic influences were notably present and the influence of atmospheric conditions laden most probably with a larger force of organisms may be assumed as a direct etiological factor in the mortality rate. Contrast the foregoing statistics with those of a more recent date which show the influence of sanitation. Goodell has stated that the mortality at the Preston Retreat in 756 cases was only two from septic disease, and Dr. Price, the present physician in charge of this same instution, has shown a still further reduction in this mortality from the enforcement of every known sanitary appliance. Winckel reports the deaths from metria in the lying-in institution in Dresden as 1.8 per cent., having fallen from 5 per cent. the previous year as a result of the enforcement of rigid measures for the prevention of disease. But take a more striking comparison. The mortality in the lying-in hospital of Vienna, which in 1823 reached 19 per cent., has fallen to the present rate of less than the half of 1 per cent. Take now the statistics of puerperal mortality in private practice as compared with that of maternity hospitals and the influence of sanitation is even more marked. In 1858 Tarnier showed that the mortality in the Paris Maternity was one in 19 whilst that in the city at large was only 1 in 322. In 1866 Lefort showed from his studies that in hospitals and in maternities the mortality was 1 in 29 whilst in cities it was one in 212. He adduced these figures to demonstrate the influence of contagion through the effects of greater crowding. The recognition of this fact led to the adoption of such methods of reform that results have flown in direct proportion to the enforcement of precautionary measures. Here the idea of sanitation asserted itself. The reforms instituted aimed first to purify the surroundings of the lying-in woman by a freer supply of pure air and less crowding and, second, to prevent contagious influences from gaining access through the agency of those in attendance on the puerpera. See the results of the enforcement of this idea by the statistics of Lariboisiére Hospital. In 1855, 467 labors took place in this institution with a total death from puerperal causes of 39 cases, 8.4 per cent. During the year 1878, 890 cases of labor took place with a mortality of 10 from puerperal causes, or less than .9 per cent. In the Marbourg Obstetric Clinic for the year ending March 31st, 1888, 308 women were confined with no deaths. In Leopold's clinic during the year ending May 1st, 1887, 1,403 women were delivered without a death from sepsis. In our own country Garrigues has shown from the records of the New York Maternity Hospital that from 1875 to 1886 the mortality from puerperal disease had fallen from 2.63 per cent. to .98 per cent. In whichever direction the search is made for statistics it will be observed that the lowering of the death-rate

during the puerperium from septic processes has been in direct ratio to the acceptance and enforcement of the principles of sanitation. So marked has been this fact and so evident are the results of strict sanitation upon the destiny of the lying-in woman that in one or two European countries (Holland and Belgium I believe) the enforcement of strict sanitation upon the part of those engaged in midwifery practice is made a legal enactment with attached penalty for its violation.

The rapid growth of professional and public sentiment in support of thorough sanitation before, during and after confinement has done more to reduce puerperal mortality than all other agencies previously employed. But the influence of sanitation upon the welfare of the lying-in woman, as pronounced as it has been, only expresses half the debt of womankind to the principles which sanitation embodies. Authorities about agree that whilst labor is a physiological process it leaves woman in a pathological state and that she is indirectly exposed by virtue of the traumatism she receives to all the sequelæ of a surgical procedure. There seems then no rule applicable to the details of a surgical operation which should not be enforced in the management of labor. The two procedures—one natural the other induced—occupy analagous positions and respond equally well to the same principles of sanitation. So we find, as in obstetric surgery the sanitary idea has conquered a mission of widest influence and usefulness, so in gynecic surgery the sanitary principle has gained a triumph no less astonishing and beneficent. Through sanitation the abdomen has become the tramping ground for every manner of incursion. The peritoneum, at one time the *bête noir* of the laparotomist, now receives his friendly touches with kindly behavior and complacent composure. Experience has taught that the sanitary principle rigidly enforced is the *sine qua non* to success in abdominal work. The abdominal surgeon who dares to ignore the principles embodied in the teachings of preventive medicine does so in the face of all that is profitable in experience and commanding in authority. Whilst eminent authorities may differ as to the necessity for antisepticism, so-called, none dispute the principles of which asepsis is the central idea and cleanliness the watchword.

The influence of the aseptic idea upon abdominal surgery has been shown in such numerous instances that a statistical statement may seem out of place in this connection. I cannot refrain from calling attention, however, in this paper to the astonishing results presented by the work of Mr. Lawson Tait and of Dr. Bantock, both of whom are noted for the thorough attention given to the details of operative work and to the principles of sanitation. Mr. Tait has been able to record a total of 146 ovariotomies without a single death, whilst Dr. Bantock's record shows 86 successful cases in consecutive order. It has fallen to Mr. Tait's honor to record a total of 1,000 abdominal sections with the low mortality rate of 5.3 per cent. in contrast with the work of a great predecessor in this field whose first 1,000 laparotomies gave a mortality of 25 per cent. To what special factor can this difference in results be attributed? Apart from any special fitness or training upon the part of the individual operator the knowledge of a sanitary law will assert its influence in the decision reached. If we move faster than those who have preceded us, is it not fair to assume that this progress is largely due to the fact that we have caught hold of progressive ideas and principles and have been ready to accept and enforce such principles as the embodiment of a broad and rational system of scientific development?

Whilst then it will appear from the foregoing considerations that it has been the distinguished mission of sanitary science to reduce puerperal mortality to its present low percentage it is a most striking fact that sanitary science largely owes its present influence to the observations made during the puerperium and to the deductions made from such observations. It may be profitable to inquire how these mutual influences have been brought about. An examination of the status of sanitary science prior to the acceptance of the doctrine of specific infection will show that the laws of sanitation were so general in their application and so indefinite in their aim that general results only followed their enforcement. So long as the causation of disease was involved in obscurity just so long were the means of arresting or destroying causative influences imperfect in design and in effect. An imperfect conception of an etiological factor implied an imperfect application of the methods of combatting causative influences. Our present knowledge of the behavior of contagious and infectious miasms and our knowledge of the means of arresting or of preventing their influence is based upon a knowledge of their individual characteristics, mode of development, manner of action and form of expression. This knowledge of cause and of effect has made more reliable those methods of sanitation which deal with causative influences. The perfection of the principles of sanitary science rests essentially upon such knowledge. The Ancients knew thousands of years ago that foul air and impure water were causes of disease. This knowledge is instinctive in many forms of animal life. Yet whilst this was true human society profited but little by such knowledge until it was further shown that epidemics and pestilential diseases were likewise referable to atmospheric influences. But sanitary science still labored in the dark when it merely dealt with impure air, food and water. Its principles were only in part known, and only partially un-

derstood; it dealt in the most rudimentary way with the origin and spread of contagion and infection. The evolution of the science of preventive medicine has only moved from this crude domain of general principles to a plane of high art and specialized function since it entered upon the study of the etiology of disease from a standpoint of microbiology. The belief in a poison germ first came and then the methods of preventing the development and spread of this germ followed, but this idea, as great as it was in advance of former ideas, was not sufficient. It was not until the microscope revealed a world of organisms at peace and at war with the animal economy, many rendering important service to animal life, others destroying animal life in manifold ways, that the study, arrangement and classification of microörganisms, the discovery of their influence upon fermentation, putrefaction and as carriers of disease, the recognition of their presence in zymotic and infectious diseases were successfully worked out. These studies in microbiology led to such an understanding of the nature and cause of disease as to bring into successful operation approved methods of arresting and preventing diseased processes. The progress of scientific enquiry has largely, if not conclusively, confirmed the opinion that as all ferments are living organisms so all contagia are allied living organisms. The special organism in its causal relation to a special disease has been determined in too many instances to admit of doubt as to the existence of specific bacteria as a special factor in the causation and extension of diseased processes. From the date of the discovery of certain rodlets in the blood of animals suffering from splenic fever by Pollender in 1849 down to the present time the causal relation between bacteria and disease has been strengthened and confirmed by the most careful investigations. The discovery of the bacterium of relapsing fever by Obermeyer followed in 1873. The discovery of the bacillus tuberculosis by Koch in 1882 was a most important advance in establishing the truth of the germ theory. Next came the important observation of Koch in 1883 on the comma bacillus of cholera. Discovery of one microbe after another has followed until it is now well affirmed that there is a microörganism of syphilis, of gonorrhœa, of malaria, of whooping-cough and pneumonia, of typhoid fever, diphtheria and erysipelas, of septicemia, pyemia and tetanus. The doctrine of spontaneous generation, no longer tenable, gives place to the germ theory that no life is evolved save from a living germ. The importance of this principle—now accepted by the most reliable observers as an established fact—has been affirmed by the statistics of modern medicine and surgery in no mistakable language. Sanitary science aiding with its principles of cleanliness, of disinfection, of asepticism has lifted the practice of medicine and surgery to their present plane of successful combat with microörganisms. Medicine and surgery on the other hand by the acceptance of the principles of sanitation have strengthened the influence of the sanitary idea until it has been broadened into a science of modern microbiology, preventive medicine and aseptic surgery.

I have now attempted to show that the discovery of an external influence of septic origin was the first step in the direction of arresting pathological states dependent upon contagious and infectious conditions. If diseases originate from disease germs, whether manufactured within or external to the human economy, the prevention and cure of disease must be undertaken from a standpoint which aims to combat such germs. It has been shown that when once the germ has gained access to the human economy its growth is so favored by conditions that a combat with its influence must be waged at a great disadvantage. Those agencies which destroy bacteria also destroy human tissues and it is an unequal contest which science wages with germicides against bacteria safely housed in the fluids and tissues of the body. Science has yet no specific germ destroyer of safe internal administration. Quite evident is it that the great aim of science is in the direction of preventive medicine which seeks to arrest all forms of bacterial development *in embryone* as it were, and thus intercept their disastrous influence as promoters of disease. The conditions under which microörganisms develop and multiply, the modes by which they are carried from place to place, the pernicious influence they are capable of establishing are now pretty well understood. Through the agency of air, water, food and clothing, through moisture, warmth and all uncleanliness, through putrefaction, stench and imperfect drainage the various organisms find ready avenues of travel and all the conditions necessary to their culture and activity. Sanitary science has discovered these facts, aseptic medicine and surgery have confirmed them. The general recognition of these facts alone is now needed to secure the immense results which are destined to follow the acceptance and enforcement of the sanitary principles in their integrity. Just so soon as the entire profession of medicine is brought to a position from which all professional work is made to conform to the universal law of sanitation, from that moment will the statistics of mortality from all preventable diseases reach the lowest possible limit. But the general enforcement and acceptance of the laws of sanitation by the profession of medicine are wholly inadequate to the purpose. The public mind must be educated up to the full understanding of the important influence of strict sanitation upon the public health. This can only be done through intelligent and liberal legislation, through

wise and well-trained public officials, through efficient health organizations, and lastly through the intelligent coöperation of the citizen. Is it a utopian scheme to hope for such intelligent action and large acceptance of the principles of sanitation as are here outlined? Let those answer who have witnessed the progress of preventive medicine within the last quarter of a century. So long as human society is cradled in the lap of ignorance and folly, just so long will its growth be hampered by its surroundings, but as society rises in intelligence and into the liberty of a rational and enlightened conception of its wants and necessities we may expect it to accept and adopt those higher principles of social government which will perpetuate its existence in the most perfect form. The conclusions which may be drawn from the foregoing general consideration may be summed up in brief as follows:

1st. The doctrine that diseases of the puerperium and the pathogenic processes following surgical procedures are of bacterial origin is now universally accepted by scientific authorities. This opinion asserts the idea that diseases are of septic origin, that they are introduced from external influences and do not originate *de novo* in a given case. This view annuls the doctrine of spontaneous development of microörganisms and traces their origin to antecedent conditions.

2nd. The acceptance of the doctrine of external origin of microörganisms implies the necessity of preventing their cultivation and propagation before they have gained access to the human economy.

3rd. The science of sanitation has for its mission the destruction of microörganisms and the prevention of all pernicious influences which would arise from their propogation.

4th. The principles of sanitation are entitled to the utmost consideration and enforcement in all methods of medical and surgical work. These principles insist upon the employment of every known means of preventing and of arresting diseased processes dependent upon bacteria by the removal of all conditions which favor the development and conveyance of such bacteria.

5th. The medical profession is now fully cognizant of the various agencies through which diseased germs originate and the numerous channels through which they are introduced into the human economy. It therefore becomes the solemn duty of the medical profession to give full support to the teachings and principles of preventive medicine and to advocate the fullest acceptance of such teachings and principles by the general public through regularly organized channels of public sanitation and through appeals to intelligent citizenship.

ONE YEAR OF ACETANILIDE IN PEDIATRIC PRACTICE.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Carbolic acid and its allies, all products of coal-tar, have been demonstrated to be of great value.

Of this class none, in my judgment, are superior to acetanilide. This substance was prepared as early as 1853 by Gerhardt, by the action of aniline upon acetychloride, or anhydrous acetic acid, but up to a year or so ago it was not known to possess valuable medicinal properties.

The discoverers of the fact—Cohn and Hepp—that the drug possessed excellent therapeutical qualities gave it a new name, supposed to be more appropriate for use in prescribing, namely, "antifebrin," which name is protected by patent laws, and only the authorized makers and agents can use this term.

"Acetanilide" is in every respect identical with antifebrin, but possesses this advantage, that it is cheaper, and in specifying it we do not cater to the patent medicine trade. It forms colorless, shining plates, melting at 233.6° F., boiling at 563° F. It is almost tasteless, but after a time a slight burning sensation is produced upon the tongue. It is somewhat insoluble in cold water, more readily soluble in hot water; very freely so in alcohol or alcoholic solutions.

It possesses neither basic nor acid properties, and is not readily attacked by most reagents.

In general, my experience has convinced me that acetanilide is about three times as effective as antipyrin in promptness, duration, and extent of action, and is certainly less depressing and correspondingly dangerous. I might readily pay tribute to the value of the drug in adult practice for the relief of violent neuralgias, facial and sciatic; high grade fevers, typhoid and malarial; the discomforts of gout and rheumatism—but this is not the object of this paper.

It is my purpose to present the epitome of one year's experience of the use of acetanilide in the treatment of diseases of children. This experience is a complete endorsement of the announcement of Widowitz in favor of its peculiarly safe and steady action in children up to 4 years of age, or twice or thrice the amount in those older.

When the drug is given for its analgesic effect, where the temperature is normal, it requires eight times the amount to secure the fall of one degree of temperature that it does when fever is present.

At the last meeting of the British Medical Association, at Glasgow, Scotland, Dr. J. Theodore Cash made a most elaborate report in the Section of Pharmacology and Therapeutics upon acetanilide and its kindred. He stated that when it is

given in doses of not more than ¾ gr. for every 2 lbs. of weight of the individual it is free from danger; in doses of ten times that amount it is toxic, causing great fall of temperature, twitching of the muscles, and death. The action upon the spinal cord is decided, its reflex irritability being greatly impaired. Ultimately anæsthesia is produced.[1]

The irritability of motor nerves is greatly reduced or even suspended by the action of acetanilide; muscular irritability and contractility are markedly diminished. Cash states that large doses produce a marked change in the blood, methæmoglobin becoming abundant, while oxyhæmoglobin is greatly reduced. He states that it is questionable in how far the presence of an impurity may lead to this result and to the accompanying cyanosis, which was observed by Germain Sée and others.

In some instances good-sized doses have produced marked cyanosis, which is the one disagreeable feature of the drug, but this has been exceptional; but even when it occurs many observers have given evidence that it is not important.

In the majority of instances I have furnished the drug myself, as is my custom when administering any new remedy (where I desire to be sure of its being reliable, and to limit and control the amount taken). When prescribing the drug, by specifying that furnished by Lehn & Fink, of New York, I have rarely had the cyanosis result.

In administering the drug to children I have in many instances taken the 5 gr. tablets of Hazard & Hazard and triturated them with sugar; being tasteless, the administration is easy when combined with the sugar, and the dose can be regulated as desired. If depression be present, small quantities of brandy may accompany it.

I have found the following formula agreeable and desirable:

R.	Acetanilide (Lehn & Fink)	30 grs.
	Alcohol	3 drachms.
	Glycerine	2 "
	Aquæ cinnamon	3 "
	Syr. tolu	1 oz.

M. Sig. One or two teaspoonfuls every two or three hours, as may be desired.

Although it is probable that the drug diminishes the number of the red blood corpuscles, yet it requires a long administration of large doses to produce a condition of anæmia, and even if this should result it is very amenable to treatment.

Some of the observers have stated that of the various pyretic affections which would appear to indicate the administration of acetanilide, but which derive the least benefit from it, may be mentioned

SCARLET FEVER.

My experience does not bear out this statement. A record of fifty cases of scarlet fever wherein the temperature was controlled pleasantly and satisfactorily has been made during the year. I will not weary you with the presentment of the dreary details of all the cases, but furnish a typical one, and present conclusions based upon the complete record.

I. C., æt. 5 years, taken suddenly with vomiting and high fever. Examination revealed a temperature of 104°, pulse 120, sore throat, headache, and general discomfort.

Administered appropriate remedies to allay irritability of throat and stomach, and to control temperature gave 2½ grs. of acetanilide every two hours, to be given regularly if awake.

Second visit made at end of twelve hours, and during interval 10 grs. of remedy had been taken. Temperature was 101°, patient had passed a comfortable night, a well pronounced rash was present, and a clear case of scarlet fever was announced. By the use of the acetanilide the temperature was kept in the neighborhood of 100°. All the symptoms were rendered more mild.

The uniform result in all the cases justified the conclusion that in acetanilide we have a remedy whereby we can surely and safely modify and soften the asperities of scarlet fever.

It is of course a fact admitted by all that scarlet fever has a definite career to run. No one should think of aborting a case of scarlet fever any more than they would of healing a broken bone in a shorter time than a month or six weeks, but we should realize that we can lessen the danger to our patient by guarding him against high temperature or the continuance of a fever which "melts down the body tissues and endangers life from the accumulation of the products of nitrogenized waste in the blood."

MEASLES.

I present the following as typical of a series of cases:

M. G., a female æt. 10, a spoiled child of luxury in a wealthy family, all the other children of which were full grown. Taken ill December 6, 1888. Sent for physician who pronounced the case one of measles, and left instructions that plenty of hot drinks be given and the room kept dark until the case had terminated. After two days and nights of restless, burning agony, no sleep, constant coughing, and the child in a frenzy of discomfort, I was summoned. I found the little girl tossing from side to side almost delirious, a most terrible burning itching present, coughing incessantly, a burning thirst, to relieve which only hot drinks were being given. Pulse 130, temperature 105°.

At once ordered cool drinks and a 5 gr. dose of acetanilide, to be repeated every two hours if awake. At next visit in the morning found that the little girl had passed a comfortable night, 10 grs. of remedy had been taken, pulse was 90 and

[1] Therapeutic Gazette.

temperature 100°, almost no disposition to cough. Itching of skin completely subsided. Two or three days of treatment terminated the case satisfactorily.

Forty-six recorded cases of measles wherein the drug was used and a large number not recorded, corroborative, present arguments to justify the opinion that acetanilide serves admirably to reduce the high temperature, tranquilize the nervous system, and allay the irritation of skin and mucous membranes present in measles.

CONGESTIVE FEVERS.

Twenty cases of congestive form of fever, possibly of malarial origin, with temperature ranging from 105° to 107°, accompanied by convulsions, successfully treated, wherein acetanilide played a most important part, could be presented, but one case in detail will serve to illustrate the whole set.

M. B., æt. 2 years, taken May 10, 1889, with severe convulsions. Physician summoned, found child in convulsions and receiving the stereotyped hot bath. Examination revealed a pulse of 140 and a temperature of 106°, a constipated condition of bowels. At once he gave an emetic and an injection, with a view to opening the lower bowel, and a calomel purge. Temperature ranged from 103° to 106° for five days, at end of which time I saw the case in consultation with the attending physician. The temperature was 104° at noon, pulse 130, delirium present, bowels were freely open. Aconite and quinine, together with calomel, had been freely given, also bromides to produce rest. The conditions strongly pointed towards meningitis.

I suggested a continuance of the calomel in infinitesimal doses ($\frac{1}{20}$ gr.) every few hours, also 5 grs. of acetanilide at once and to be followed by 2½ grs. every four hours and oftener if necessary to keep the temperature at 100°. If depression were present at any time, teaspoonful doses of brandy every two or three hours were to be given.

At next visit, made at noon the following day, it was found that 5 grs. every four hours had been necessary to keep temperature at 100°. Pulse was 90 and good volume; a few teaspoonfuls of brandy had been given. Delirium had subsided and child had rested fairly well. A chill at midnight, followed by a disposition towards higher temperature, suggested malaria, which had previously been suspected as being the *casus belli*, and pointed to the necessity of quinine, which was ordered in 5 gr. doses in mucilage per rectum every four hours.

On the following day the patient was in a better condition; the chill had not occurred as on the previous night. A continuance of the treatment, varied according to the conditions, left the patient convalescent at the end of ten days.

A very important factor in this case was, I think, the acetanilide.

In fevers the administration of the drug secures a slowing of the respiration and the pulse; arterial tension rises, diuresis and diaphoresis occur, pain is relieved, and sleep usually ensues.

The calming effect upon the nerve centres is of great value in these conditions, I think.

We know that sweating is not common in the fever of children. William Pasteur has suggested that the pungence of skin which is often met with may be partly due to this peculiarity.

Dry skin, contracted cutaneous vessels, conditions which tend to prevent a rapid loss of heat, favor elevated temperatures and are elements of danger to the child.

A brief quotation from Pasteur's excellent article on "Fever" in Keating's Cyclopædia, will be pardoned. He says: "The nature of the relations of the central nervous system to thermogenesis and thermolysis is still very imperfectly understood. Our knowledge in this direction is chiefly based upon experimentation on animals. Careful experiments have demonstrated the presence at the anterior part of the caudate nucleus, near its median convexity, of a tract which, whenever it is stimulated by puncture with a fine needle or by an electric current, gives rise to an increase of the body temperature, which persists for some time and is attended by an increase of the amount of the oxygen absorbed and of the carbonic acid given off by the animal. It has been shown by calorimetric experiments that this pyrexia is not due to vaso-motor disturbance, causing retention of heat, but that there is an increase in heat production. At the same time the pulse and respiration rates are raised and the elimination of urea is increased.

"It appears, therefore, that puncture of the caudate nucleus produces in certain animals a pyrexia which possesses all the essential properties of fever regarded as abnormal elevation of temperature. The value of this experiment in support of the neurotic origin of fever can hardly be overestimated. Some valuable evidence is also forthcoming on the clinical side. In this connection it will suffice to recall the fact that there are on record well attested cases of cerebral tumor, pontine hæmorrhage, softening hæmorrhage in or about the basal ganglia, injuries of the spinal cord, tumors of the spinal meninges, and others, in which very high temperatures have been observed—temperatures for which no other cause was discoverable than the nervous lesion with which the patient was affected."

No one can doubt that there is a close relationship existing between the nervous system and heat production and heat regulation.

In fact, it is practically accepted that "there exist in the body chemical processes, resulting chiefly in the production of heat; that these processes are under direct control of the nervous system and possibly of special thermal nerves;

and lastly, that there are regions in the central nervous system which are in some way connected with these nerves, and through them control the chemical processes resulting in heat production."

The more we study the fever problem the stronger the conviction that a large part of our treatment should be directed towards tranquilizing the nervous system and aiding elimination, not forgetting nutrition.

In acetanilide we have a remedy, I think, which reduces high temperature by its beneficial effects upon the nervous system.

In this drug, carefully and judiciously used in conjunction or alternating with the cooling bath or the wet sheet, we have the sheet-anchor of safety to our fever patients.

WHOOPING-COUGH.

It is surprising that the opinion obtains so freely among the people that this disease is a trifling one and not much ameuable to treatment.

We do not need to refer to the mortality records of England and Wales, which are so perfectly kept, and which prove that whooping-cough ranks third in the fatal diseases of infancy in England.

The complications which may accompany the disease are the canse of its fatality. Whether the microörganism of pertussis described by Burger, of Bonn, be established or not, there can be no doubt of the fact that the disease is caused by a special germ.

In our treatment the most we can do probably, as yet, is to guard our patients from the possible complications.

After treating fifty cases of whooping-cough with acetanilide, I am convinced we have a valuable remedy for the disease. Given in doses of from 2½ to 5 grs. every two to four hours, according to age, we can materially mitigate the severity of the paroxysms and reduce their frequency. By the judicions administration of the remedy, coupled with proper attention to diet, clothing and an open state of the alimentary canal, we rob the disease of three-fourths of its discomforts, terrors and dangers.

CONVULSIONS.

In November, 1888, in a paper read to the McDowell Medical Society, of Kentucky, on "Infantile Convulsions," I testified as follows: "In acetanilide I am sure we have an excellent remedy for the relief and prevention of convulsions. Clinical experience for one year justifies the conclusion. In confirmation of my own experience of its value in the convulsive diseases, I note the fact that Dr. H. H. Moyer, in the London *Medical Record* of August 20, 1888, reports favorably on its use in epilepsy, in 5 gr. doses three times daily."

Seven months' additional clinical experience endorses the position taken above.

CHOREA.

Three cases of chorea in girls ranging from 7 to 14 years of age have been more benefited by the acetanilide—in doses of 5 grs. from three to four times daily, as indicated, coupled with proper nutrition and tonics—than by any other plan of treatment. The recovery was more prompt.

After more than eighteen months' experience in the use of acetanilide for many of the febrile, spasmodic, and painful disturbances of childhood —a record of its use upon 600 children, together with at least 500 unrecorded cases, kept for purpose of comparison with past experiences with other drugs for similar conditions—I feel justified in arriving at the following conclusions:

1. Acetanilide, carefully guarded and properly used, is a safe and reliable remedy in the diseases of infancy and childhood.

2. Whether used for the antipyretic, analgesic, or sedative effect, it is preferable to antipyrin in that the result secured is of longer continuance and the depression is not so great.

3. The cyanosis which sometimes results from its liberal use is not uniform, and, while it is not an agreeable feature, my experience corroborates that of other observers to the effect that it soon passes off and is not accompanied by danger.

4. It is not desirable, in reducing temperature, no matter what means be employed, to use them in excess to the extent of securing sudden and great reduction. Especially is it preferable, in using acetanilide for antipyretic purposes, to give it in medium doses to the extent of keeping the temperature down to a reasonable point—in the neighborhood of 100° F. It is better to give small doses and repeat them more frequently, rather than large ones at long intervals.

5. It is of great value as a controller of temperature in the various fevers, whether they be caused by the typhoid germ, malaria, or the exanthemata.

6. It serves almost as a specific in whooping-cough, not in aborting the disease, as it has a definite course to run, but in mitigating the discomforts and controlling the paroxysms of the same.

7. Acetanilide, while of great value and surely safer than antipyrin, is no exception to the rule that obtains with all drugs. It should be handled carefully, administered judiciously, and under no circumstances should the public be educated in its use.

The time has come for the profession to call a halt and endeavor to check the reckless use of medicines upon the part of the people. The secular press, in disseminating information regarding the action of drugs, gleaned from medical sources, is to a large degree responsible for the drugging habits of the people; but the medical profession is not blameless in the matter, in that many physicians verbally advise the pur-

chase of many drugs by their patients, and carelessly and thoughtlessly impress them with their harmlessness.

8. Medicines, which are nothing more than the tools by which the physician hopes to accomplish certain ends, should no more be left in the hands of an uninformed lay public, to use at their pleasure, than should the equipments of a surgeon's office or the accoutrements of a standing army (all intended, if properly used, as a protection to the lives of the citizens) be recklessly placed in the hands of children, or those unskilled in their use.

If the members of our sister profession of pharmacy do not become imbued with the above thought, and act upon it, physicians may be forced to supply themselves with a part, at least, of the medicines needful to cope with disease, feeling that the attending inconvenience will be more than compensated by a knowledge of the fact that they will have a more definite control over the drugs administered to their patients.

THE AMETROPIÆ AND THEIR RELATION TO INSUFFICIENCIES OF THE RECTI MUSCLES.

Read by Title in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN W. WRIGHT, M.D.,
OF COLUMBUS, O.

The normal functions of the orbital muscles, when the eye is considered as a monocular organ only, are complicated; when we study their actions in connection with binocular vision, their offices appear confused in the extreme; but when, in addition, there exists an abnormal condition in the action of one or more of these muscles, then we have a perplexing skein to untangle. Such has the subject of insufficiencies of the orbital muscles proven itself to be.

In seeking a remedy for an affection, we do so more intelligently by first searching for the underlying condition of which the symptoms are but the declaration. Hence in asthenopia of the orbital muscles, as in all other affections, we would, as far as possible, trace all symptoms back along the line of causation to their ultimate origin. We are thus necessitated to consider some of the most noticeable and common affections of the ocular muscles, whose conditions are attributed to refractive abnormalities.

For the purpose of being clearly comprehensible, the subject will be discussed in the following order:

1. Does an error of refraction contribute in any manner to muscular asthenopia?

2. What is the *modus operandi* of the impairment of the function of the ocular muscles in ametropia?

3. Will rendering the eye emmetropic contribute in restoring the weakened muscle to its normal condition?

The only difference between muscular asthenopia and strabismus is that in insufficiency there is temporary inability to maintain binocular vision, while in strabismus the inability is constant. Muscular asthenopia implies an inability to bring both visual lines to bear *constantly* upon one point. In strabismus there is inability to bring both visual lines to bear upon one point *at any time*. In muscular insufficiency, then, the muscle is partially disabled, and is enabled only a part of the time, and then with considerable effort, to perform its functions; while in strabismus it is totally disabled from performing these functions.

We are fully cognizant of the influence of hyperopia and myopia upon the induction and maintenance of convergent and divergent squint.

Observant oculists have noted that from 75 to 85 per cent. of all cases of convergent squint are hyperopic, and in the divergent there is even a larger per cent. of myopia. This alone adequately demonstrates the influence of the ametropiæ upon the functions of the orbital muscles.

As we all well know, it does not follow that all cases of hyperopia and myopia are the subjects of muscular asthenopia, the occupations of the ametropic having much to do in developing this affection.

In order that the eye may deviate from its normal position one of two conditions is necessary: there must be a physical or functional weakness of one muscle, or set of muscles, from which the eye is deflected, or an excessive strength of a muscle or set of muscles, toward which it becomes directed.

In simple hyperopia and myopia how is this accomplished?

2. *The Modus Operandi.*—In hyperopia the patient is compelled to accommodate in order to focus the rays of light upon the retina and make the image more distinct. The greater the degree of hyperopia the more he is compelled to exert his accommodation. Accommodation produces convergence, and the long continued effort of accommodation for this reason makes the convergence permanent.

In a few cases of hyperopia the muscle is not able to stand the long continued strain at convergence, and in order to avoid confusion of images or diplopia, the eye is instinctively turned out and entirely away from its fellow. Thus in hyperopia we occasionally have a divergent squint.

In myopia, as is well known, the patient sees well and often without effort of accommodation, when the object is brought to a very near point; hence, in order to obtain binocular vision, one or both eyes must become abnormally converged. The greater the degree of myopia, the more convergence is necessary in order to maintain binoc-

ular vision. The effort being irksome, and the work too fatiguing to accomplish with both eyes simultaneously, as is especially the case when there is much near work to perform, one eye is disregarded and involuntarily turns out, far enough away from its fellow, that there may be no confusion of images.

In those cases of myopia which are accompanied by convergent squint, the myopia is usually of small degree, and the amount of convergence is not so great but that the internal recti muscles may become orthopædically trained and strengthened by use for near work. In this case it is usual for one eye to become permanently convergent, and able to perform only near work, while it entirely disregards objects for a far point.

As myopia is the most common cause of divergent squint, it is evidently the greatest factor in the cause of insufficiencies of the internal recti muscles.

Myopia is Real or Factitious.—It is real if, when there is complete relaxation of the accommodation, the measurement shows that the retina is situated behind the principal focus. It is *factitious* or *forced* myopia, if the ciliary muscle is cramped in such a manner as to cause the crystalline lens to become so convex that parallel rays of light in passing through, meet before reaching the retina. This condition, as we all know, is frequently acquired in eyes that are emmetropic, and even in small degrees of hyperopia.

So far we have had under consideration the causes whereby the muscles have become *permanently* deranged, so that we may be more thoroughly equipped for the discussion of that other condition of the ocular muscles wherein they become *temporarily* unable to perform their functions.

Now it is a matter of very little importance whether the eye is *really* or *factitiously* myopic, or is hyperopic, the conditions for the production of weak internal recti muscles are exactly the same; that is, in myopia, to recapitulate, the patient must place the object close to the eye in order to obtain binocular vision. The greater the degree of myopia, the more convergence, and the more constant the effort at convergence the more strain on the internal recti muscles; hence the asthenopia.

In hyperopia the patient accommodates to cause the lens to become sufficiently convex to focus the rays of light upon the retina. As accommodation causes convergence, the more he accommodates the more he converges, and the greater the strain upon the internal recti muscles.

We can converge without accommodating, but cannot accommodate without converging. If the patient could accommodate without converging, then there would be no strain upon these muscles, hence no asthenopia in hyperopia.

As heretofore mentioned, the internal recti muscles are most frequently affected with the inability to properly perform their functions; although the external recti muscles are occasionally thus affected. This condition is produced in one of two ways: either, first, by a permanent contraction and increased strength of the internal rectus orthopædically obtained — that is, acquired by moderate and continued effort at convergence; or second, by a spasm or cramp of the internal rectus caused by an over-exertion of that muscle In either case the result is the same; the external rectus is weakened by the long continued strain upon it.

I am now confident that this cramp or spasm from overworked muscles plays a very important part in the production of insufficiencies, and I am also sure, because I have seen it practically demonstrated, that spasm of the ciliary muscle is an equal, or perhaps the most important, factor in the development of muscular asthenopia.

A muscle will not become weak without a cause. Even if it becomes cramped and spasmodically contracted (functionally strengthened), it is an evidence of weakness and not of tone. Cramp or spasm is a result of its weakened and overworked condition; and for this reason I believe there are very few cases of insufficiency without an error of refraction, either real or factitious; and the forced error is certainly the more productive of this condition.

Let us inquire *how* this may be accomplished.

Martin, I believe, advanced a theory of segmentary or unsymmetrical or, in other words, irregular contractions of the ciliary muscles, whereby the lens became irregularly curved or astigmatic. We have good reason for believing that the theory is correct.

We have all of us seen eyes which have presented all the evidences of astigmatism, simple, compound, mixed or irregular, which, after the accommodation had been thoroughly suspended under atropine, have been found to be emmetropic. Now there was a functional defect somewhere before the accommodation was suspended, and that defect could have been in but one place—the crystalline lens.

Moreover, we occasionally meet with cases that do not show any evidence of astigmatism until after the accommodation is suspended. In these there is corneal astigmatism which has been compensated for in the lens by its assuming such a shape as to correct the corneal irregularity. Donders was the first, I believe, who brought to notice this condition.

We are taught that the *macula lutea* receives the impressions of images, and that it is the "sensitive point," that the images received at other points of the retina are not so distinct, hence it is the effort of the orbital muscles to so balance the eye that the impressions may be received on this particular point.

We know the influence upon the ocular muscles where there is a clear spot of cornea on an exten-

sive opacity. The eye involuntarily assumes that position in which the rays of light will best be received on this particular portion of the cornea, so as to fall as nearly as possible upon the yellow spot, and thus secure the best possible vision that can be obtained under the circumstances. So also in other cases, where there is from any cause a removal of the pupil from behind the centre of the cornea to some other portion, the eye adapts itself to that position in which it can receive the best vision. To do do this one muscle or set of muscles become strengthened, and their antagonists correspondingly weakened.

Now we know that any abnormal change in the curvature of the crystalline lens will change the angle of vision and, upon the same principle as in corneal opacities and abnormal positions of the pupils, disturb the equilibrium of the eye by its influence upon the ocular muscles.

If, then, certain changes in the curvature of the crystalline lens are productive of insufficiencies of the internal and external recti muscles, certain other changes will also account for asthenopia of the superior and inferior recti.

To summarize thus: When an eye turns in, or out, or up, or down, or in any manner away from its normal position, there is one of two conditions existing. It does so either to place itself in such a position as to receive a better retinal image, and thereby assist both eyes to bear upon the same point; or to place itself in that position that binocular vision will be entirely disregarded in order to avoid the confusion of images.

My experience has taught me that the low degrees of ametropia are, perhaps, more fruitful in the causation and maintenance of muscular asthenopia than the high, because of the strained effort to maintain binocular vision; for as heretofore explained, in the high degrees one eye is disregarded and the patient uses the other, while in the low degrees binocular vision can be maintained with some effort, which, however, if too steadily persisted in, produces fatigue.

From this consideration of the subject, the conditions which contribute to insufficiencies may be summarized as follows: *Myopia*, *hyperopia*, *astigmatism* and *overwork*, the latter being the exciting cause, which is more or less augmented by additional refractive error.

In considering the conditions which tend to the abnormal change of the visual angle, it would seem that the *punctum saliens* in the treatment of insufficiencies of the internal recti, is to prevent great and long continued efforts at convergence, and thus relieve the inordinate contractions of these muscles. Nothing will contribute so much to this purpose as remedying any refractive error, and thus rendering the eye as nearly emmetropic as possible.

3. The indications for treatment must necessarily be brief.

Although not entirely ignoring operative procedures, it must be acknowledged that tenotomies have not afforded the brilliant results so ardently claimed for them by their supporters. A tenotomy is prejudicial for one very serious reason: the movement of the eye is curtailed, and if the operation is successful in effecting fusion of images at a near point, there is usually too much restriction of motion for a distance, hence an annoying diplopia follows, which for persons engaged in the ordinary pursuits of life is much worse than the insufficiency.

I am seriously impressed that operative procedures should be a *dernier ressort*, when all other means have failed—then advancement of the weak muscle, instead of tenotomy of the strong. There is not then the risk of diminishing the movements of the eye.

My experience has induced me to believe that there is a very intimate relation between spasm of the ciliary muscle and insufficiencies of the orbital muscles. I rarely now make an examination for refractive error, without making the test for insufficiency, and I have been surprised at the frequency with which I have met this affection.

Although insufficiency of the internal rectus is far the most frequent, yet the test will frequently disclose it in the other orbital muscles, and especially in the superior and inferior recti.

The examination now referred to is rather a preliminary inspection, for we can rarely determine correctly the refractive condition of an eye without its thorough atropinization. The accommodation requires to be thoroughly suspended before an attempt is made at correction with glasses. This is important, whether there appears to be an insufficiency or not in connection with the refractive error, for the reason that after the eyes are thoroughly atropinized we usually find them in a very different condition from that shown at the preliminary examination. What was then regarded as myopia, now turns out to be emmetropia, or perhaps hyperopia. What appeared a well-marked astigmatism is now neutralized, and insufficiencies frequently disappear.

I first began making observations relative to the influence of spasm of the ciliary muscle upon the recti muscles in August, 1888, since which time I have had sixteen cases representing marked insufficiencies, some of the internal recti, a few of the superior and inferior, and one of the external rectus, all of which have entirely disappeared under the use of atropine.

Some of these cases marked an astigmatism, but after the thorough relaxation of the accommodation, the astigmatism in nearly all the cases vanished with the insufficiency.

I will report here two of these cases as representatives of the conditions herein described.

C. S. M., railway clerk, æt. 32, called February 8, 1889. Was suffering much from defective vis-

ion. The letters appeared blurred, and the letters and words ran together. Suffered from vertigo and insomnia, and occasionally experienced an annoying tremor in his left eye. It was impossible for him to continue his work but a short time, when he was compelled to rest his eyes before proceeding farther.

The preliminary examination revealed nothing particularly in the way of refractive error, as neither a + nor — glass made any perceptible improvement. A test for insufficiency, however, developed an insufficiency of the interni 3° at 20 feet, and 12° at 1 foot. I recommended thorough atropinization by the use of a 4 gr. solution, applied to the eyes every six hours, which was continued for twenty-four hours.

February 9. R. E. = $\frac{20}{20}$ with + 30; L. E. = $\frac{20}{30}$ with + 40. Atropine ordered continued twenty-four hours longer.

February 10. R. E. = $\frac{20}{20}$ with + 30; L. E. = $\frac{20}{30}$ with + 30 best.

I now made the test for insufficiency by use of the prism in connection with the correcting glasses, and found that the insufficiency had entirely disappeared. He was now prescribed a + 50 for each eye and instructed to wear them constantly, and when the accommodation was fully restored, to report.

February 23. Patient called and expressed himself as being well satisfied with the glasses. Could work all day with ease, suffers no more from vertigo, and sleeps well all night.

April 10. Patient called and complained of tremor of left eye, and a partial return to old symptoms, as blurring of letters and vertigo. Examination revealed the same degrees of insufficiency as before—3° at 20 feet, 12° at 1 foot.

As vision appeared more nearly perfect at a distance in both eyes with + 40 than + 50, I prescribed the former and, as all the trouble appeared to be with the left eye, ordered the atropine solution continued in that eye, three times daily for one week.

June 15. Patient called and informed me that he has suffered no inconvenience from either eye since the atropinization, more than two months ago, although he has had an extra amount of work to perform. The examination revealed no insufficiency whatever.

Miss O. C., æt. 17 years, has suffered so much from defective vision that she was compelled to quit school.

May 18, 1889. R. E. $\frac{20}{30}$ with + 24 cyl. ax. vert.; L. E. = $\frac{20}{20}$. No improvement with glasses. Insufficiency external recti 3° at 20 feet, nothing at 1 foot. Eyes ordered under atropine every six hours for twenty-four hours.

May 19. R. E. = $\frac{20}{20}$ with + 7; L. E. $\frac{20}{30}$, best with + 7. Eyes kept under atropine twenty-four hours longer, and the same glasses gave the best vision as yesterday. There is now no astigmatism nor insufficiency.

A + 12 was prescribed for each eye, and the glasses were ordered to be worn constantly. June 19 I again saw the patient, and vision is $\frac{20}{20}$ with both eyes under the correcting glasses.

133 E. Spring St.

EMPYEMA OF THE FRONTAL SINUSES.

Read in the Section of Laryngology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY GEORGE A. RICHARDS, M.D.,
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A subject of which comparatively little mention is made in most of the treatises on surgery and diseases of the nose, but which, on account of the great distress and many accidents liable to occur, deserves more consideration, is empyema of the frontal sinuses. Some of the text-books on diseases of the eye give a very good description of the disease with its symptoms, course and treatment. The periodical press is, however, the source from which to draw material, and this has paid liberal tribute in the compilation of the following paper.

We wish to record a case occurring in the service of Dr. S. O. VanderPoel and the writer at the Vanderbilt clinic, New York, and will then give the results of the study of forty-eight other cases collected from medical literature. Only those cases with fairly complete histories have been accepted, and of these there are some in which many important points have been omitted in the description.

Case.—Horatio N., æt. 57, United States. Forty years ago patient dealt in plaster of Paris; this caused a chronic rhinitis, from which he has suffered ever since. Fifteen years ago a polyp was removed from the right side of the nose. This returned, and nothing has been done for it during the last thirteen years, during which time he has had difficulty in breathing through the right side of the nose and a pretty constant discharge until three years ago, when the right side of the nose became absolutely occluded. He has been troubled with frequent "colds," accompanied by much headache and some frontal pressure. At these times there have been much epiphora and slight ptosis on the right side. For six years he has noticed failing sight, especially of the right eye, and a marked loss of memory and of the power of application. This was sufficient to cause interference with business. The senses of smell and taste have also been diminished.

Eight months ago patient noticed a swelling at the root of the nose on the right side, at first small, gradually enlarging without any pain, but with a constant feeling of distension in the frontal region. This was accompanied by occasional flushing, but never by any chilly feelings. The size of the swelling was about that of a small

cherry, but varied somewhat, being larger in the evening than in the morning. When it was large the discharge was increased and was thick, ropy and greenish-yellow. The patient slept well, ate well and felt well, except for the mental depression.

He thinks the right eye has been too prominent at times, but has never had any diplopia. Examination showed right side of nose completely filled with polypi. After several sittings, in which over twenty polypi of different sizes were extracted, pressure on the swelling caused discharge of very foul-smelling pus from nose; this appeared about opposite the middle turbinated bone. The anterior portion of the middle turbinated body was the last to be cleaned. An opening was then made into the external swelling from without, and the entire tract washed out with a solution of carbolic acid. Forced expiration caused the passage of pus, water and air through the wound when nose and mouth were closed. After a few days a perforated rubber drainage tube was put into the nose through the opening, and thereafter the parts were cleansed thrice daily. The relief to all symptoms was marked and immediate. The tube was removed and the wound healed in less than one month; and now, six months after, the change in the patient has been very great.

The disease may be due to a primary inflammation of the mucous membrane. This might cause an acute or chronic obstruction of the infundibulum, and so a retention of pus. Probably the majority of cases in which no cause can be remembered belongs to this class, a coryza being such an unimportant episode as not to be recalled after the lapse of a short time. Of the forty-eight cases acute obstruction is mentioned in but three. Large turbinated bodies and polypi were found in only four cases; and foreign bodies, such as bullets, metal, maggots, flies and other insects, as well as diseases, such as syphilis, glanders, caries and necrosis, are very rare in the causation of this disease. Injuries by blows or falls caused fourteen cases, distributed equally between males and females. Thus, there was over half the entire number in which no known cause could be given. In view of the fact that most of these cases occurred before it was the rule to examine the nose of patients so affected, or in the practice of men who were not accustomed to this examination, we can not say how much greater the proportion of cases caused by blocking up of the infundibulum by some intra-nasal disease would be. It is our belief, however, that many of the cases in which "no cause" is stated were the result of stenosis of the passage by polypi, large turbinated bodies, hypertrophic rhinitis, or inspissated mucus. Thus the statement of Bader[1], that eight in nine cases result from injury, is rather inexact, the disease being, as a rule, the result of a more or less intense catarrhal inflammation of the mucous membrane of the sinus.

In the very acute cases, it may be severe enough to cause rapid accumulation of pus; in the more chronic cases it may cause distension by mucus, this resulting in irritation and the production of a greater or less amount of pus, which is mixed with the mucus. In a few cases the trouble may have been caused by a periostitis followed by necrosis, and this by inflammation of the lining membrane of the sinus.

When accumulation of pus or muco-pus occurs sufficient to cause distension, the orbital plate of the frontal bone, being the thinnest and least resisting wall of the sinus, is the first to give way, and so the swelling in the majority of cases occupies a position at the inner and upper part of the orbit and at the root of the nose, just at the junction of the nasal, superior maxillary and lachrymal bones with the frontal, above the attachment of the tendo oculi. This is an important point in diagnosis, for the swelling has been mistaken for a distension of the lachrymal sac. In a few cases the swelling has occupied a position just above the supraorbital ridge; in these cases there was probably more necrosis than absorption of bone. Perforation of the posterior wall of the sinus is not a very infrequent occurrence.

Of forty-eight cases, twenty-four males and nineteen females were the subjects of the disease; in five cases the sex was not mentioned. There is no apparent reason why one side should be involved more frequently than another; yet we find the left side affected twenty-one times, against twelve cases in which the right side was the seat of the disease. A simultaneous involvement of both sides is exceedingly rare. In fifteen cases no mention is made of the side. The age of males varied between 13 and 69 years, averaging 35 years. The average age of females was 32 years, the youngest being 10 years old, the oldest 66 years of age.

In fourteen cases of injury there was no preponderance of either sex, though it would naturally be supposed that the rougher occupations of the male would render him more liable. A peculiarity in those cases resulting from injury is the length of time which elapses between the infliction of the injury and the appearance of troublesome symptoms. Lawson[2] mentions a case in which fifty-four years elapsed between injury and seeking relief. The time varied between one and twenty-four years in fourteen cases. On the other hand, in the acute cases only eight days may elapse, or patients may suffer several weeks or months before consulting a physician.

In the very acute cases the symptoms are frontal pain and oppression, the pain sometimes radiating along the course of the supraorbital nerve; excessive headache, some fever, chilly feelings and

[1] Bader. The Eye and its Natural and Morbid Changes.

[2] Lawson. Practitioner, London, 1870, v, pp. 8–12.

general malaise, together with the symptoms of an ordinary coryza, inability to breathe through the nose, discharge of mucus, muco-pus or sero-pus, sneezing, and lachrymation. There may be swelling, œdema and an erysipelatous blush over the site of the sinus involved. These cases have been mistaken for trne erysipelas.

The subacute cases present the same picture in a modified form.

In the chronic cases, which include the vast majority, the invasion is very insidious—a feeling of distension in the frontal region, pain, which may be severe, but is generally slight; a more or less constant discharge from the nose is a frequent symptom. Sooner or later a swelling appears; this is accompanied by but little pain, and at first is so hard as to have been mistaken in several cases for an orbital or frontal exostosis. A sense of fluctuation, obscure at first, gradually becomes marked by the absorption of the bone. The swelling finally may grow so large that it presses the eyeball downward and outward, causing marked exophthalmos, as in the eleven cases recorded by Hulke[3], Lawson[4], Wells[5], Thompson[6], Bull[7], Michaelis[8], Otto[9], and Warren[10].

Failing sight is a somewhat frequent occurrence, having been present in eight cases. Occasionally vision becomes better or worse, according as the swelling decreases or increases in size. Diplopia and ptosis are sometimes present. In our case here recorded ptosis was intermittent, occurring during acute exacerbation.

Higgens[11] emphasizes the variation in the size of the swelling in the morning and evening. The size varies greatly; the cavity may contain but one drachm of fluid, or may contain as much as three ounces (Bull[12]), or even four ounces, as in the case recorded by Warren[13]. Welge[14] reports a case where, after severe cerebral symptoms and final recovery, the orbit and the frontal, sphenoidal and maxillary sinuses formed one enormous cavity. In this case the cause was probably connected with a gonorrhœa.

In some cases there is an occasional patency of the canal, and then the tumor may be diminished in size and pus forced from the nose by pressure on the swelling; or the tumor may be enlarged by forcible expiration with the nose and mouth closed. Lamzweerde[15] records a case in which the first appearance of a tumor immediately succeeded a violent attack of vomiting.

The apparent pulsation of the swelling, due to breathing, and the discharge of matter similar in appearance to cerebral substance, have only to be mentioned to guard against the possibility of error.

The complications which may occur are not many, but their great importance deserves more than a mere reference.

On account of the blocking up of the air passage and the resulting mouth breathing, a very distressing dryness of the throat sometimes occurs. This, however, does not cause so much complaint as the diminution or even complete loss of the senses of smell and taste.

A true erysipelas is a possible but rather infrequent complication. This cannot be said of involvement of the brain, as Bousquet[16], Richter[17], Demarquay,[18] and Celliez[19] each record a case in which the sinus communicated with an abscess in the anterior lobe of the brain, secondary to the empyema.

Beers, quoted by Walton, 1875, describes a case in which the patient refused to submit to an operation and lost the sight of both eyes.

In cases of cerebral involvement, anosmia and optic neuritis may be the first symptom to which attention is drawn.

Otto[20] records a case in which an enormous polyp (?) involving orbit, frontal sinus, nose and ethmoidal cells, and causing accumulation of pus, was complicated by meningitis and death.

When there is no visible swelling and no discharge from the nose, as in the case of Celliez, the trouble may be mistaken for abscess of the lungs, as described by Lieutaud.[21] This patient expectorated a large amount of pus, and had fever, headache, and great prostration. After death an enormous cavity, comprising the frontal, sphenoidal and maxillary sinuses, was found filled with pus. There was absolutely no lung lesion.

The treatment of this disease is exceedingly simple, and the results of correct treatment are very gratifying.

In the seventeenth and early part of the eighteenth centuries physicians sometimes used snuff, thinking that, as nature occasionally discharged the collection through the nose, an indication was thereby given that should be followed by art.

Runge, in the middle of the eighteenth century, recommended a more rational treatment, namely, stuffing the cavity, after opening, with irritating dressings, and so causing granulation and healing from the bottom. He mentions the deeply depressed cicatrix and persistent fistulæ occasionally resulting.

Dörner, and also Vidal, many years ago advised having a free opening into the nose and the

[3] Hulke. Ophth. Hosp. Rep., London, 1861, iii, pp. 147–154. Ophth. Hosp, Rep., London, 1862, iv, pp. 176–178.
[4] Lawson. Op. cit.
[5] Wells. Lancet, London, 1870, i, p. 694.
[6] Thompson. Northwest. Lancet, St. Paul, 1884–5, iv, pp. 284–286.
[7] Bull. Med. Record, New York, 1885, xxviii, p. 120.
[8] Michaelis. Jour. für die Chirurgie, etc., 1862, iii, p. 627.
[9] Otto. Deutsch. Arch. f. Klin. Med., 1873, xi, pp. 532–538.
[10] Warren. Surgical Observations, etc., Boston, 1867, p. 57.
[11] Higgens. Guy's Hosp. Rep., London, 1881, 3 s., xxv, pp. 27–40.
[12] Bull. Op. cit.
[13] Warren. Op. cit.
[14] Welge. Dissert. Götting., 1786.
[15] Lamzweerde. Appendix ad Armam. Lugduin Batav., 1693.
[16] Bousquet. Prog. Méd., Paris, 1877, v, p. 972.
[17] Richter In der Novi Comment, Soc. Reg. Scient. Götting, 1773.
[18] Demarquay. Traité des Tumeurs de l'Orbite, Paris, 1860.
[19] Celliez. Journal de Corvisart, Leroux, et Boyer, T. xi.
[20] Otto. Op. cit.
[21] Lieutaud. Acad. Roy. des Sciences, 1735, p. 18.

introduction of a fillet or tube-canula through the opening into the nose. This is substantially the treatment followed to-day.

With the signs and symptoms of a tumor in the locality mentioned we would be inclined to make an exploratory incision. A small exploring needle or a very small drill would give important information as to the contents and thickness of the bony wall of these swellings, if the case presented itself before absorption of the bone has taken place. If a collection of pus be found, a trephine, or the dental engine's drills or a chisel should be freely used. After an opening large enough to admit the finger has been made over the site of the disease and careful exploration of the cavity has taken place, a free opening should be made into the nose, the instrument, guided by a finger of the left hand, introduced into the nostril of the same side. If necessary, force may be used in breaking through the floor of the cavity into the upper part of the nose. A perforated rubber drainage tube should be introduced into the nose through the opening and the entire cavity washed with some antiseptic fluid. Listerine proved very valuable and pleasant in our case. An astringent may be used later, if necessary.

In the records of the cases analyzed one is at once struck by the comparatively small amount of attention paid to the subject of free drainage through the nose. In six cases no mention is made of this, and of these only one is said to have been cured. It is stated in eleven cases that there was no drainage through the nose; of this number three were cured, seven not cured, one not mentioned. In twenty-five cases in which there was free drainage into the nose twenty-three were cured, and in the other two the result was not stated.

Soelberg Wells advises passing an instrument upwards from the nose into the sinus. Ogston[22] says he has never been able to do so, and in our case it was tried, but was found absolutely impracticable. Except in favorable cases this would seem to be very difficult.

In cleaning the cavity, naturally any foreign body would be removed; and in case of polypoid degeneration of the mucous membrane lining the sinus, as described by Ogston and Péan[23], this should be thoroughly destroyed. Any dead bone should be removed, using great care and no force if the bone be connected with the posterior wall of the sinus, lest the membranes of the brain or the brain itself should be injured.

Death occurred in six cases; in four caused by secondary abscess of the brain, in one by meningitis, and in another by albuminuria.

For help in the preparation of this article we are much indebted to Dr. C. J. Colles. The greater number of references has been omitted purposely, as some of the later German articles and French theses are not obtainable. An addendum will be published containing references to these and bibliography to date.

[22] Ogston. Med. Chronicle, Manchester, 1884-5, i, p. 235.
[23] Péan. Gaz. des Hôp., Paris, 1881, p. 66.

Dr. Jonathan Wright reported a case in an old woman in whom, after removal of intranasal obstruction, it was necessary to trephine the supraorbital sinus, and this still proving unavailing, the whole anterior wall was removed and the wound allowed to heal by granulation from the bottom. When last seen this procedure promised success, but a large and very deforming cicatrix must result, though drainage was of course resorted to, both after trephining and after the more extended operation.

INITIAL EYE SYMPTOMS IN LOCOMOTOR ATAXY.

Read before the Fort Wayne Academy of Medicine.

BY KENT K. WHEELOCK, M.D.,
OF FORT WAYNE, IND.,
PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE FORT WAYNE COLLEGE OF MEDICINE.

The case which I am about to present for your consideration involves the question of the prodromal symptoms of locomotor ataxy, and while to my mind the symptoms are sufficient to warrant me in arriving at the conclusion that my patient has the prodromata of tabes, yet if any one should think the case not fully established his fullest criticism is invited as much in the interest of the patient as the discussion of the whole question involved.

On November 27, 1887, Frederick B., æt 55, iron merchant in Fort Wayne, consulted me for an ear trouble which had bothered him for some time, as much on account of a singing noise which had recently sprung up as the defect in hearing which had annoyed him for some time. The singing was confined to the left ear.

Right ear W. = $\frac{3}{6}$, left ear W. = P. Eustachian tube not open to catheter, Politzer or Valsalvas' method. By traction on membrana tymp. with Siegel's otoscope there was some improvement in the noise. Treatment by attempted inflation, catheterization and local application did not improve the hearing or noise so the patient was not recommended to continue.

On June 21, 1889, he again came under my observation and gave me the following history: Has suffered from occasional frontal headache for three years, vomiting on two or three occasions Headaches came on about every three or four weeks and lasted from twelve to eighteen hours. On May 1st of the present year had a serious headache which culminated in vomiting at about 3 P.M.; at the same time patient lost consciousness and fell to the floor. He remained unconscious five minutes, the eyes turning up, but not oscil-

lating. Has had dizzy spells for about one year, and the dizziness has increased in intensity till at present are frequent, depending upon his occupation. When he looks up or ascends a stair it becomes worse. The increase has been greater since May 1. Has had sharp shooting pains in the legs below the knees for a year or two, which were attributed to rheumatism, and were treated as such. Yet he had no joint swelling or painful joints. The trouble for which I was consulted was double vision, which came on after the attack in May. He consulted a quack first and was under his treatment for six weeks.

Upon examination I found right eye S. $\frac{20}{50}$; + 0.5 D. S. = $\frac{20}{20}$; left eye = $\frac{20}{20}$; accepts 0.5 D. Right eye + 2.5 D. Jaeger No. 1, 12–16; left eye same, showing that the accommodation ruled by the third nerve is not impaired. The double images are vertical and when neither eye is covered with a colored glass the image of the left eye stands 2½ feet above the image of the right eye, and leans towards the perpendicular or lower one, showing that the cornea of the left eye looks downwards when the candle flame impinges on the retina below the macula and is projected in the same direction it would project images if the optic axis were horizontal or parallel with the other eye. The movement of both eyes is perfect in every direction, showing the effect to be partial only. By placing a prism of 15° base toward the paretic or superior rectus muscle, the images are single, or 8° base up before left eye and 7° base down before right eye blend the images. The Argyle-Robertson pupil is present; the pupil is about the size of a pin head and does not respond to stimulation of light, either artificial or natural, when intensified by condensation. Upon covering either eye and asking the patient to read, the pupils contract; they also contract when both eyes attempt to converge in the act of reading. Under atropia the left pupil dilated in an ovoid manner, but after a few hours the space became circular.

Examination of the ears shows that the t. f. c′ is not heard in the left ear when placed on the vertex, and the same tone heard distinctly in right ear is not heard at all in left ear; t. f. on left mastoid not heard, while the same sound is heard eighteen seconds on the right mastoid in a corresponding position. When struck upon a hard substance, producing a very loud tone, the vibrations heard for a moment at a point near the center of the mastoid and on the temporal bone directly above the external auditory meatus, Voice sound heard very feebly in left ear, W. not at all. Right ear moderate voice heard, also watch. The knee-jerk is exaggerated, and if the patient attempts to close his eyes and stand with his heels together he sways from side to side. His walk backwards is very unsteady and while advancing with eyes open he steps high and drops his feet heavily. While it is a well established clinical fact, substantiated by post-mortem appearances, that deafness of one or both ears frequently follows sclerosis of the posterior columns of the spinal cord, yet tabes could not be predicated upon the presence of this symptom alone, and would only, with our present knowledge, go for a factor in the total symptoms recognized as definitive. Erb regards the coëxistence of the tabes and deafness as accidental rather than causative, and cites Lucas's two cases in support of this statement. Yet he admits the probability of relationship to exist, and cites a case of a Russian naval officer, in which, during the initial stage occasional headaches and deafness had arisen, the latter gradually increasing. This case passed into the hands of Prof. Moos, when, in a few months, total loss of bone conduction was followed by loss of ærial conduction, and the patient became deaf. Later he seems to have modified his opinion, for he states that in some cases of tabes he found definite atrophy of the auditory nerve to be the cause of deafness. Thos. Buzzard, in the *Lancet*, Sept., 1881, quotes Duchene, Remak and Tobinard as having already pointed out that the auditory nerve may be affected in tabes, and Pierrot showed that it is a frequent complication of this disease. On consulting my notes I find that bone conduction in the case of my lamented friend Dr. J. S. Gregg (who died of tabes), whose ears and eyes I examined a number of times, showed subnormal bone conduction. The late Dr. McBride found a greater or less degree of deafness in every case of tabes which came under his observation, although it was often transitory. In the absence of recorded examinations showing in what the defective hearing consisted, we can only assume that he meant that a subnormal bone conduction existed. Ormerod calls attention to it in five out of thirteen cases. In general I think it can only be regarded as a side light in the picture. Yet when seen in connection with the affections of the third, fourth and sixth the attentive should be at once arrested. Amongst all the affections of the special senses, the disturbance of the muscle balance is most frequent in tabes. As prodromal and transitory symptoms they occur as pupil disturbances and muscle paresis in more than 50 per cent. of all cases of locomotor ataxy, according to Erb. And it is this transitory character of the eye troubles which establish their value as prodromata. In the course of the disease, and before its termination, some form of eye muscle disturbance occurs in one third of the cases. They then have lost their value and form only another character in the *bizzarre* picture whose lineaments are so well known. Bunching the observations of Argyle-Robertson, Knapp, Lever and Heupel, the pupils are sometimes contracted or dilated on one side; but more frequently there is a bilateral, uni-

form, generally pretty considerable contraction, which presents the character of spinal myosis; that is, the pupils do not react to light, but do react distinctly to accommodative impulses. Spitzka says among the exact signs of tabes reflex iridoplegia and abolition of the knee-jerk are the first to appear. He further says that it may be assumed with safety that in 99 out of 100 cases the inability of the pupil to respond to light and the absence of the knee-jerk will be found long before ataxy is developed. Cases have been found where no other positive signs were found. Spitzka found double vision in fifty-eight out of eighty-one tabetic patients in whom the oculo-motor signs were recorded. He says further: "By far the most important of the exact prodromal signs of tabes are two symptoms—one involving a special faculty of coördination and the other the reflex movement of the pupil. One or both of these must be present to justify the diagnosis of incipient tabes." He further says: "Reflex iridoplegia is, when once established, the most permanent and unvarying evidence of the disease, and is of great differential diagnosis, because it is found in very few other conditions. Spitzka recognizes tinnitus and atrophy of the auditory nerves among the symptoms of tabes." There is one symptom, or sign rather, which a typical tabes should present, absent in my case, viz.: the Westphal symptom. Instead of this loss of reflex my case presents a heightened reflex. This may be accounted for on the supposition that the lateral columns have become affected first, when we have later a combined posterior and lateral sclerosis. It has been claimed that the disappearance of the patellar jerk has been preceded by exaggerated reflex and that the exaggerated reflex is a quite common phenomena.

This paper, read before the Academy of Medicine in Sept., 1889, was not intended for publication, but to present what I then thought to be an interesting case of incipient tabes. After referring him back to his family physician with an opinion in accordance with what has been said above, the patient was referred to Prof. Pepper who discovered diabetes mellitus. The eye symptoms were probably due to irritation at the floor of the fourth ventricle, while the ear trouble was due to the spinal trouble as set forth above.

ULCERATIVE ENDOCARDITIS.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. G. TRUAX, M.D.,
OF NEW YORK CITY.

This is not a new disease. It has been known and described under several different names for at least ninety years. It is not the intention of the writer to give a complete history of the disease to date. Such an effort would be as profitable as digging up the ground in a field thoroughly cultivated and resplendent in the beauty of its production. The writer, in the researches he has made, has failed to discover any really new thought or fact which could be called the fruit of labor in this particular field during the past few years. His intention is to give a history of such cases as have come under his care, together with any thought which may seem to him to be of practical value. Any person desirous of becoming more thoroughly informed on this subject is referred by the writer to Dr. Osler's lecture, published in the *Lancet* of 1885, and to the writings of others.

Case 1.—Frances Blaza; born in Germany; U. S. five months; age 21 years; unable to speak English; was admitted into the Harlem Hospital May 31, 1887. Her occupation was that of a domestic. No family or personal history could be obtained, excepting the meagre one from her aunt, that her mind was unbalanced at each menstrual epoch, and that her menstrual period did not occur oftener than every three months. Patient was a large, healthy, well-developed girl, and the fact of her not menstruating regularly was evidence that something was wrong with her circulation. When admitted to the hospital she was flowing. Every muscle of her body seemed to take on choreic contractions, and she was unable to remain quiet a moment; mind confused, and at times delirious. The house physician supposed she was suffering from meningitis, and to give her relief had all the hair shaved from her head and the ice cap applied. He also put her upon a mixture of bromide of potassium and hydrate of chloral. Afterwards she was given sulphate of morphine hypodermically, and quinine in ten grain doses three times daily. These medicines had but little effect. The convulsions lasted to the end.

June 1st her highest temperature was 102⅘°; June 2d, 103⅘°; pulse, 120; June 3d, 104°; June 4th, 103⅘°. On the fourth day hyosyamim and morphine were given together. Result—died June 5th, 1 A.M. The autopsy revealed an ulcerative endocarditis, an old pericarditis with extensive adhesions between heart and pericardium, calcified tubercular deposits in apex of left lung, œdema of both lungs, and a parenchymatous hepatitis; slight meningitis. The vegetations were confined to the mitral valve and were numerous. Some of them had ulcerated. None of the other organs diseased.

Case 2.—John C.; age, 19 years; native of Ireland; U. S. three years; single; laborer; admitted into the hospital March 6, 1889. His temperature at this time was 102°; pulse, 120; respiration, 40. His body and limbs were covered with an eruption of a peculiar nature. It was in patches of irregular size and shape; average diameter,

one-half inch. Color, faded brown and purplish, not elevated, and would not fade upon pressure; hæmorrhagic in character.

The following is all that could be obtained of his history previous to his admission into the hospital: His habits were good and he was considered healthy. They said patient had been sick for three days. March 7th, temperature 104°; pulse, 120; respiration, 40. March 8th, temperature 103½; pulse, 145; respiration, 60. When first seen by writer patient was very delirious; in the intervals was in a semi-comatose condition. While delirious he was constantly talking to some imaginary person. Autopsy held by Dr. Grauer, March 9th, P.M.. Body fairly well nourished; heart hypertrophied; aortic, mitral and tricuspid valves had vegetative growths upon them. Some of these growths had ulcerated. There was one marked ulcer, so extensive that quite a portion of the heart-tissue was destroyed. At apex of right lung was found a tubercle. The lungs were quite œdematous; spleen enlarged and contained several hæmorrhagic infarctions; brain, there was a large hæmorrhage into the right lateral ventricle, also small abscesses in the cerebrum. There was a large tuberculous ulcer near the ileo-cæcal valve.

Case 3.—Wm. C.; age, 51 years; native of the United States; widower; occupation, none; admitted March 2, 1889. Gave the history of being a hard drinker. Physical examination showed him to be suffering with a slight pain in the knee, but no swelling or redness. Heart hypertrophied; no murmur could be detected. Urine, color normal; sp. gr., 1,014; no albumen. Patient semi-comatose when admitted; temperature, 102°; pulse, 132, aud very weak; respiration, 40. During the night he was very delirious; did not sleep at all. March 3d, highest temperature 101½°; March 4th, 101°; March 5th, 104°. Died March 6th, 5:30 A.M. Autopsy held by Dr. Grauer. Rigor mortis well marked; body well nourished. Brain, lepto-meningitis, which had become suppurative; cerebral fluid slightly increased; heart hypertrophied; vegetative growths on mitral and aortic valves; some had ulcerated; spleen enlarged and contained small hæmorrhagic infarctions and abscesses; kidneys showed parenchymatous inflammation, also contained some small metastatic abscesses; lungs œdematous, with small abscesses.

Case 4.—Frank C.; age, 26 years; native of Italy; U. S. three months; occupation, laborer; admitted in the hospital February 28, 1888, A.M. Diagnosis, double lobar pneumonia, cardiac lesions, mitral regurgitant murmur. There was considerable effusion into the abdominal cavity. I will not give the history of this patient in detail. He was admitted February 28th and died March 27th. He was cured of his pneumonia, as the autopsy showed. At no time did his temperature get above 102°. At no time during his illness could albumen be detected in his urine. Autopsy: Fluid in pericardial sac; fluid in pleural cavity; fluid in peritoneal cavity; vegetations on the aortic and tricuspid valves (free edges of the valves); adhesions of pleura on left side; brown induration of the lungs, due to the heart trouble; spleen enlarged by a hard, passive congestion; left kidney larger than normal and fatty; parenchymatous nephritis; right kidney contained small cysts; chronic gastritis; liver had a nutmeg appearance.

Case 5.—Patrick K.; age, 15 years; native of Ireland; U. S. six years; occupation, butcher's apprentice; always healthy until last sickness; was admitted March 10, 1889, into the hospital and treated as a case of tubercular meningitis. Died March 22d. Autopsy made by Dr. Grauer. Body very much emaciated; sordes on teeth; cervical glands very much enlarged; rigor mortis well marked; brain, tubercular meningitis, pachymeningitis hæmorrhagica interna of right lobe; little exudation over cortex, but much more at base; tubercles studded all over left hemisphere, fewer in number over right; both sides of the fissure of Sylvius studded with tubercles; heart, four small tubercles, of the size of a pinhead, over upper surface of right ventricle, and one on the lower part near septum-ventriculorum; small vegetation on mitral valve, which had ulcerated; mitral stenosis and slight regurgitation.

Case 6.—Mr. P.; about 45 years old; a man of considerable wealth; complained of feeling badly for two weeks; did not think he was sick enough to go to bed or to call in a physician. Went into a restaurant to get his lunch. While waiting to be served he suddenly jumped to his feet and, taking hold of a chair, commenced smashing everything within his reach. He was finally controlled by those present, put in a carriage and sent home. The next day the writer was called in consultation to see him. Body covered with purpuric spots, some of which had become brown. He was very delirious, conversing with some imaginary person. It took the united strength of two attendants to keep him in bed. Temperature, 103°. No heart murmur could be heard. From symptoms, temperature, manner of attack, a diagnosis of ulcerative endocarditis was made. Another physician, a specialist on nervous diseases, was called in. His diagnosis was acute mania; his advice, that the patient be sent to an insane asylum. He was sent; result, died in three days. A partial autopsy was obtained. The writer promised he would confine his examination to the heart alone. The mitral and aortic valves had vegetative growths upon them; one, of considerable size, had ulcerated. This last case is really the cause of the writer choosing this disease as the subject of his paper. While the disease is undoubtedly a rare one, there is a possibility of its being more frequent than we think.

The writer's reason for so thinking is this: Of the six cases reported, only two of them were diagnosed properly before death; and were it not that the real trouble was revealed by an autopsy, the truth would never have been known in four of them.

The writer wishes to call your attention to the following observations: 1. In none of his cases was the disease primary and uncomplicated. 2. The heart lesions were not always associated with heart murmur. 3. The temperature and many of the symptoms are common with those of typhoid fever. 4. In none of the writer's cases did the temperature rise above 104°. It was lower in the morning, higher in the evening. 5. Meningitis almost always present. 6. Two cases complicated with tuberculosis, one with pneumonia, one with pleurisy, one with hypertrophy of heart, and the other not examined sufficiently to be able to tell. 7. Treatment seemed to have no particular effect, excepting hypnotics. Fowler's solution of arsenious acid, quinine and bichloride of mercury were tried. 8. The heart was examined and cultures made in three of the most malignant cases for microörganisms; none were ever found. The writer still inclines to the belief that the disease has for its cause the infection of some germ.

17 East 127th street.

THE USE OF VERATRUM VIRIDE IN THE TREATMENT OF DISEASES.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY THOMAS LEGARÉ, M.D.,

OF CHARLESTON, S. C.

I beg leave to introduce to the notice of the Section a few remarks upon the properties and uses of the veratrum viride. We all know of its remarkable properties in reducing the frequency of the pulse. This is a property which renders it particularly valuable in diseases, and for which it has been prescribed in fevers, with extreme rapidity of circulation, and in inflammatory affections of the lungs. It diminishes the pulsations of the heart and arteries twenty or thirty strokes in a few hours, simply by its action upon the brain and nervous system. Its powers, I am induced to think from some trials with it, will be found of more value in chronic affections, and as little has been stated of its application to these cases, I shall be excused for calling your attention to some of these diseases, in which, after a moderate experience, I am disposed to think it will prove a valuable agent. These are, first, affections of the head, and all the kindred complaints connected with undue excitement of this organ. These diseases are exhibited in every variety of form, from dulness of the faculties, with heaviness, stupor or oppression, to those more exalted conditions of the same organ, as manifested in extreme nervousness, keen sensibility, and finally, perverted reason. These various grades of excitement are connected with undue vascular action, and this again with organic structure. Any article which operates so efficiently upon the vascular system, must have its influences first exerted upon the seat and centre of all the vital operations of the body, and it is to sedation, then, that we are to ascribe its beneficial effects in the diseases I am about to bring to your notice.

The simplest disorders of the head in which its good effects are manifested, is in vascular fulness of this organ, particularly manifested in the advanced periods of life. The symptoms following upon this state of the brain, and giddiness, dulness of the mental faculties, constant headache, dimness or darkness of vision, the movements of the body being much circumscribed. For the removal of these symptoms I have found the tincture, largely diluted with water, and taken at regular intervals during the day, very effectual. The form of administration is the following: ℞. Tinct. verat. vir., gtt. xxv; aqua, ℥ vi; ℳ. The dose is ʒ ij to ʒ iv every two or three hours until relief is obtained. The doses operate favorably, often without any sensible evacuation, sometimes only to give regularity to the bowels. The next class of cases are those connected with a greater degree of vascular action, and the first that I shall bring to your notice is epilepsy, and unconnected with any mechanical derangement, but a nervous affection, as when it is brought on by grief or mental disappointment.

In a case of this nature, the same formula for its administration as already mentioned has been efficacious in diminishing the frequency of the paroxysms, and of rendering them milder. From a daily recurrence, they have been suspended for a week; and from a violence in their action, attended with convulsive contraction, they have been reduced to simple unconsciousness, of short duration. Upon their recurrence there is no foaming at the mouth, nor is the patient thrown down, but the paroxysm occurs while standing, and rapidly exhausts itself. The only sensible effects, after a month's use of the article, was to impair the appetite, and to give regularity in the operation of the bowels. I prefer presenting the results of this article in a condensed form, rather than in detail.

Another class of diseases of the same organ is that characterized by extreme nervousness, or such exaltation of nervous excitement as borders on mania. We recognize in such subjects extreme vivacity, with alternate dejection of spirits, cephalalgia, frebricula, impaired digestion, coldness of the extremities, sallow complexion, subjects as described seem to be on the verge of insanity, and, without proper care, pass rapidly into all its wildness and extravagances. Tem-

perance alone holds the reins, and keeps the system from rushing headlong on destruction. With this, so valuable a mentor, our medicine strongly coöperates, and, in a case from which my description was drawn, was found highly useful in repressing exuberances and extravagances of feeling and conduct, which gave to those about the patient the impression of madness approaching, while it calmed and relieved the bodily indispositions. The same form of administration was pursued as in the preceding.

In one other form of disease, of a cerebro-spinal character, viz.: crural neuralgia of the lower extremities, the virtues of this article have been tested. This disease has the misnomer, rheumatism, too frequently applied to it, which it too often resembles in its worst features; and without some suitable and reasonable remedy, the patient is doomed, I might say, to a life of confinement and of suffering. I will not detain you by referring to its causes; in general terms, it is produced by whatever gives rise to inflammation of the spinal column, particularly about the lumbar portion, as lifting heavy weights. After an extensive employment of many articles, I have derived almost immediate relief from the veratrum, the pains in the limbs being greatly mitigated, the uneasiness of the back relieved, the power of locomotion regained in a very short time after commencing the use of it.

Another form of disease of rather different character, but in which, from its reputed operation, it may be considered useful, is in cancerous affections. An article which, from its sedative influence upon the human system, could reduce the pulsations of the heart and arteries twenty, thirty or forty strokes in the minute, in the course of sixteen or eighteen hours, must be considered a useful agent in this disease, attended, as it is, with an exalted state of nervous sensibilities. It was a very suitable subject for experiment, and without any authority, but with an eye to its reputed qualities, I considered that it might be advantageously resorted to. Accordingly, in a case of carcinomi uteri, where the sufferings of the patient were of the usual intense character, I have succeeded in affording very great relief, and this without any of the narcotism induced by the preparations of opium. A great change has been brought about in the sufferings and condition of the patient, and from many painful hours by day and sleepless ones by night, she has come to enjoy comparative ease, the paroxysms of pain being less frequently renewed, and no night passing without quiet sleep of from four to six hours. The form of administration is that already detailed: ℞. Tinct. verat. virid., gtt. xxv or xxx; aqua, ℥ vj; dose, ℥ ss, taken every two or three hours. This quantity was given daily, without producing any great uneasiness of stomach; and when, from long use, its powers began to subside, they have been subtained by the addition of ℥ j to ℥ jss of laudanum to the mixture, and this quantity taken in the twenty-four hours. By this compound unwonted energy has been given to the mixture, an effect too great from the amount of laudanum added, so much so, that for the past forty-eight hours comparative tranquility has prevailed, and many hours of sleep obtained. In a disease of such a character, any addition which can be made to our resources in counteracting its malignant disposition, is a duty we owe to our patients, and a great relief to the physician; and it is from the satisfaction I have felt from this single trial that I have been induced (thus precipitately, as may be thought) to proclaim its efficacy. To alleviate pain is as much the province of the physician as to cure disease; and since in many it is all the relief we can aim at, and fate decrees that we must die, it is no less the duty of the physician to soothe and soften the horrors of its approach, and let the passage at least be easy and serene.

These are the few diseases in which I have tested its operation, and they are of a different character from any in which it has been recommended. I may be only on the threshold of inquiry, and it is with a view to elicit from others more information, or a confirmation of my statements, that I have been induced, rather hurriedly, to bring them to the notice of the Association. I have consumed, in these experiments, between two and three ounces of the tincture, and have not known any unpleasant effects produced from the use of it. From my present experience and impression, I am disposed to think that it will always occupy a prominent position in the materia medica. As a local application I have used the white hellebore in scabies, herpes, and kindred affections. I must be excused recording its efficacy in removing a fungous growth from the inner part of the arm, at the elbow-joint, of a warty character, of the size of a hickory nut, which had existed twenty-five years. The patient was of very advanced age, bordering on ninety years; was much annoyed at this morbid growth, not only from the size of the tumor, but from its offensive odor; the profuse discharge irritating the adjacent skin, the necessity of frequent dressing and cleansing (but for her age and extreme aversion to the knife, excision would have been practiced). This morbid growth, after the trial of many articles, was removed by being powdered, several times a day, with the root of the white hellebore. Its effect was to cause the immediate cessation of the discharge, and a gradual exfoliation, I may say, from the whole surface of the tumor, until it was finally entirely removed. To have removed in a short time, by such an application, what the knife seemed only capable of accomplishing, seemed a triumph worthy of record, and must plead my apology for its introduction.

CONTRIBUTIONS TO LARYNGOLOGY.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY EPHRAIM CUTTER, M.D., LL.D.,
OF NEW YORK.

1. AN OLD CASE OF THYROTOMY, 1866. SUCCESSFUL, 1889.

In 1866 I performed what was called thyrotomy modified—that is, by the disuse of tracheotomy or tube for the removal of a large sarcoma which nearly filled the calibre of the larynx. It was necessary to make new vocal and breath bands by the scissors. An account was published in the *American Journal of Medical Science*, December, 1866. This case is living and phonates well. She can also sing a few notes of the middle register. This case has also an interest in the light of a recent report of the results of thyrotomy by Dr. Hoppa, of Warrburg. He collected 104 cases done since 1879. Four cases died after the operation; 100 cases were cured, as far as the operation was concerned. He found eighteen recoveries with normal voice out of thirty-eight. Sixty per cent. of Dr. Hoppa's cases had normal voice, and some sang.

The youngest case that the writer operated on was a child of twenty-two months. Here a tracheotomy tube was used. The growth was very voluminous, and new vocal and breath bands had to be made by scissors. Voice was restored, but death from cholera infantum followed soon after. The writer agrees with Dr. Hoppa that the operation is desirable.

2. TWO CASES OF FIBROID ENLARGEMENT OF THE ARYTENOID CARTILAGES.

Case 1.—Résumé after twenty-one years' lapse since treated. Permanent recovery.

In February, 1868, Prof. H. M. Field, M.D., of Dartmouth College, placed under my care Mrs. G. H. Jones, of Newton, Mass. She was a middle-aged lady, apparently in good health, but was annoyed by irritation in the throat, cough, and difficulty of swallowing; her health otherwise was good. On examination I found the throat and larynx healthy, with the exception of the left arytenoid cartilage, which stood up with its tip enlarged, obovoid, the long diameter vertical, side diameter half an inch, and about three-quarters of an inch long. It resembled very much the hard rubber and ivory bougies which are used to dilate the strictures of the œsophagus. The surface was covered with a faintly colored mucous membrane, through which shone the white, pearly, lustrous body of the enlargement, very much as the cartilages of the ribs appear at an autopsy.

It appeared to be of a cartilaginous, or what I now call a fibroid structure. There was no evidence of tuberculous disease, though at that time I had not learned how to detect consumption in the blood as I do now; still, I am not prepared to say it might not have been tuberculous. In this case I was confronted with a lesion I had never heard of, and was thrown on my own resources as to treatment. I gave the matter considerable thought, and being influenced by the good results of free incisions in tissues in the other parts of the body, which were indurated to that extent that I then felt as if foreign substances were imbedded in them, I resolved to try the effect of free incisions upon the growth.

Not satisfied with the knives I had, because they were not simple enough, I had one made by Codman & Shurtleff, the whole length of which, handle and all, was 10½ inches; length of handle, 3 inches; length of shaft of knife, which was rounded and tapering, 5 inches. At the distal end of the shaft there was a piece 2½ inches long joined to the shaft by an angle of 110°. The upper part of the short piece was round and cylindrical; the lower part was flattened in a direction parallel to the long axis of the instrument; on one side near its point it was flat, and on the other beveled in two planes, coming down to a blunt, flattened point.

With this knife I made free scarifications under the laryngoscopic mirror, so that one or two mouthfuls of blood would be expectorated at each sitting. There was so much relief experienced at these sittings, that the patient was willing and ready to accommodate my best judgment. The sittings averaged two a week, if my memory serves me rightly, for three months. The enlargement began gradually to grow less, till finally it was as small as its neighbor on the other side.

In a letter dated Newton, January 9, 1889, she writes: "Since then" (the operation) "there has been no return of the trouble. Of course when I take cold my throat is a little sensitive. Very truly yours, Mrs. G. H. Jones."

Case 2.—Not long after the first case was treated, though I am not sure about the date, an Irishman, Currier, thin, nervous, about 25 years of age, applied to me about difficulty in his throat. He was bothered about swallowing, and said he had a valve growing in his throat which sometimes choked him. His circumstances in life were such that he was not well fed or nourished, and he was impecunious, lacking, of course, the care which case 1 had, whose every want was supplied with loving attention. If anything, this growth was slightly larger than the other, more globular and movable on its base, so that it must have interfered with the respiration, especially during sleep. Indeed, his sleep was broken so much that he began to run down.

Both of these patients could swallow, but with some difficulty. Taking advantage of the experience gained in case 1, the growth was subjected to the same treatment; but owing to the mobility of its base and, I think, the increased density of

its substance combined, I was unable to penetrate so deeply as in case 1; nor could I procure so much blood from one scarification as in the other case. As the man grew weaker his difficulty was increased, so much so that I feared he would lose his life by strangulation, and with the consent of the patient and friends I decided to perform tracheotomy and introduce a tube. I did so. My assistants at the operation wished me to use ether, while I preferred chloroform. I told them that the moment he inhaled ether the secretions of the salivary and parotid glands would be started to such an extent that when he became insensible the secretions would run into the larynx, cause a spasm of the glottis, and the patient would suffocate instantly, just as people drown from the inhalation of water into the larynx when they are submerged. But they refused to assist me unless ether was employed, and as I did not see how I could do the operation without their assistance I yielded to their influence; but what has been described as likely to happen, did happen in exactly that way. The man took the ether well, but the moment the secretions of the oral cavity ran into his larynx he ceased to breathe instantly and, curiously, his heart stopped beating. I was then obliged to make my incision without regard to blood, cutting down in great haste, feeling my knife with my finger, to know where I was cutting, laid bare the rings of the trachea, separated the tissues with my fingers, and cut through. In consequence the blood went into the trachea. I put the tube in, but that filled with blood, and having no other means at hand I placed my lips on the tube and sucked the blood out, and the respiration was established, greatly to the gratification of all present. For myself, I told the gentlemen I could have done the operation *secundum artem*, but was obliged to do the best I could. I would not recommend the use of ether in such circumstances. The case went on like other cases of tracheotomy. The man was very comfortable; the growth seemed to be arrested by the relief given to the air passages. He remained under my care for about three months, when he went to Ohio on a visit. There he met some medical gentleman who, I think, was not a laryngologist, for he told the patient that the tube was of no use and should be removed. He removed it, and very soon, I was told, the man died. In this way I lost my patient and my tube.

Remarks.—If I were to meet such cases again, with the scarification, I would use the Salisbury plan of diet for fibroid tumors, and I might apply the galvanic current. In my opinion these lesions are *trophopathic*, and I think that trophopathy (*trophos*, food, and *pathos*, disease) should be the basis of treatment for all throat diseases, organic or functional.

3. A NEW NAME PROPOSED FOR THE VENTRICULAR BANDS.

The writer has studied his own larynx since 1862, inspecting his vocal bands, ventricular bands, arytenoid cartilages, during phonation, cantation from F below in the bass cleff to G above in the treble cleff, and during laughing, coughing, sneezing, respiration and deglutition; but it was not till 1884 that he had a clear idea of the function of the ventricular bands, more commonly called "false vocal cords." To be sure he had traced the alarming, clangorous, peculiar cough in spasmodic croup to the thickening, probably almost œdematous, condition of the ventricular bands. A young lady about 18 years old, apparently well, would at times exhibit this "croupal" cough. When this cough came on in school it excited, at first, alarm in teacher and scholars all over the room. When the cough was produced under the laryngoscope, the contact of the ventricular bands was trifid, dividing the ventricular plane into three equal parts, like a circular disc cut into three equal portions. This was a unique curiosity, and seems to explain the peculiar tussive cough by the chronically swelled condition of the ventricular bands.

The ventricular bands are the chief physical agents in producing cough by holding the breath back and fixing the diaphragm so that it presses the air forcibly against the closed ventricular bands, which, suddenly and instantly relaxed, allow the air to rush forth as if projected from a weapon, and thus the explosive sound is produced which we call cough, and the outgoing air expels whatever secretions may have been borne upwards by the ciliæ of the bronchial and tracheal epithelia to where the air can reach. From this function in cough the ventricular bands might be called "cough" bands or chords.

But their chief function in health is the holding of the breath. Professor C. W. Emerson, Ph.D., principal of the Monroe School of Oratory, Boston, lately stated to his pupils "that for many years he had taught that the vocal cords were the chief agents in holding the breath, and not the rigid setting of the abdominal muscular walls and diaphragm; that in normal breathing the vocal bands close for an instant during expiration, and the action of the diaphragm and of the abdominal muscles thus arrested forces the inspired air into the apices of the lungs, expanding them in a normal manner and supplying fresh air, and that thus the full development of the upper chest was obtained and maintained in speaking and singing; that in unhealthy respiration the vocal cords did not close and hold the air, and that hence flat, weak chests and weak voices were the natural consequences of the unresisted outgo; that when he came across some articles on the subject[1] he found it was not the

vocal cords, but the ventricular bands, that did this work of arrest." After this statement the writer demonstrated on himself the fact that the ventricular bands close in order to hold the breath during phonation, cantation, etc., and that, so far as can be seen, the vocal bands have a rest during this function of holding the breath, which is of the greatest importance to speakers and singers who wish to do efficient work, and, to bring the subject home, to the medical man who reads a paper and to the audience who is listening to him.

In 1884 the writer appealed to professional laryngologists to give a new name to the false vocal cords, or ventricular bands; but as he has heard of no response to this appeal he ventures now to suggest some names for approval, premising that the word "chords," or "cords," is not expressive enough of the situation; for to do so one has to imagine a cello D string about 1½ inches long, split longitudinally into two equal parts, a section of the end being a semicircle, the rounded side of the string forming the band, and the squared side prolonged or towards the walls of the larynx. Imagine a string like this. How little music it would make! The fact is, the nearest analogy to the vocal bands is found in the lips of a cornet player, stretched over the embouchure of the mouth-piece; only the vocal bands are joined in front and opened behind, while the lips of the cornet player are joined at each side. The vocal bands are made tense by the stretching backwards of the arytenoid cartilages, etc., while the lips are stretched over the circular ring of the mouth-piece. Players speak of "making a lip," but singers and speakers "make their glottis" instinctively.

The ventricular bands are ill named, because the ventricles they form with the vocal bands are accidental things, and not important functions of which we have spoken, to wit: the proper holding of the breath in respiration, phonation, cantation, sneezing, etc. Suppose we follow the nomenclature "vocal bands," then we might call the ventricular bands (1) breath bands, (2) breath holders, (3) breath cords, (4) breath valves, (5) breath lips.

If, instead of the vocal bands for the true vocal cords, we say "voice bands," then the writer would prefer for the false vocal cords, "breath bands," until some one else favors us with a better name; but as false vocal cords have gone, so shall ventricular bands go, as being inexpressive of the functions of the important mucous membrane, red-colored processes or bands, that form the middle of the three valves of the larynx, to wit: (1) the epiglottis, (2) breath bands, (3) voice bands.

[1] (*a*) Gaillard's Medical Journal, October, 1884; (*b*) Transactions Music Teachers' National Association (America), 1887; (*c*) Transactions Ninth International Medical Congress, 1887, vol. iv, pp. 105–111.

The closing of one after the other, beginning with valve 3, Dr. Frederick Semeleder, now of Mexico, showed beautifully in 1862, during the function of swallowing.

The Ariston, Broadway and 55th street, June, 1889.

LAPAROTOMY FOR PERFORATING TYPHOID ULCER.

BY REED B. BONTECOU, M.D.,
OF TROY, N. Y.

On October 26, 1889, I was called in consultation with Dr. St. John, of Centre Brunswick, to see Arthur P. Dater, a farmer, æt. 27, living near Millville, some miles from Troy, in a healthy district, and with comfortable surroundings. I learned from his physician, Dr. St. John, that he had been suffering from typhoid fever for some forty days past, having had a relapse after the first twenty days of illness, and that at two A.M. on the day of my visit he had been suddenly seized with symptoms of peritonitis. We found him in a state of moderate collapse, pulse very frequent, skin bathed in perspiration, abdomen tympanitic, tense, and an absence of liver dulness. Intestinal perforation was diagnosed, and the chances of life with or without operation fairly stated to his family and himself, and with their consent and his own I proceeded, about 7 P.M., with artificial light, with strict antiseptic precautions, to the operation, assisted by Dr. St. John and my son, Dr. R. Brinsmade Bontecou. A median incision, three or four inches in length, was made, and on opening the peritoneum a gush of gas, followed by a quantity of brownish, muddy serum, escaped. The small intestines were distended and vividly red; the distal portion of the ilium was at once sought for and readily found, and presented a circular perforation of about three-sixteenths of an inch in diameter in one of the Peyerean patches, some four or five inches from the ileo-cæcal valve, through which gas and feculence were escaping. Several of the patches in the lower twelve or eighteen inches of the intestine were much enlarged and thickened, and presented bright red spots on the peritoneal surface, as if threatening perforation. But no other openings were found, and I turned in the ulcerated patch in a transverse fold, being unable to make one longitudinally on account of the thickened mass of glandular tissue, which, if treated in that manner, would have diminished the lumen of the intestine too much. The rupture was covered in by a Lembert continuous suture, and after irrigating the peritoneal cavity thoroughly with boiled water, I closed the wound around a large sized *rubber* drainage-tube (having no glass ones with me), which I had doubled, the bend being within the cavity. Iodoform was freely dusted

over external wound, and a dressing of antiseptic gauze covered the whole.

His condition after the operation was as good as when he was put on the table, and we returned several miles to our home. My son, who was much interested in the case, volunteered to return and remain with him during the night, his attending physician being unable to do so. After an absence of four hours, consumed in the journey to and fro, from the bedside, my son reported finding him with a better pulse, free from pain, and in a better general condition than after the operation, and promised success. He became mildly delirious towards the early morning, and though hypodermics of morphine were used, he managed in some way to loose his dressing and pulled out the drainage-tube, probably tearing open the repaired intestine, for soon afterwards he suddenly collapsed and died. My son was, unfortunately, not provided with instruments to repair the damage. An autopsy was refused. I should like to add to the foregoing that the intestine in the vicinity of the perforation, and below that point to its termination, was covered with a layer of organized lymph, indicating that the perforation must have been more than seventeen hours old. The appendix was examined and found healthy, but red, as were all the intestinal surfaces.

The first case of perforating typhoid ulcer that I operated upon was in October, 1887. The man was in much more profound collapse, the accident having happened some 36 hours at least before I saw him, and he did not recover. But in this case the shock was less and the prospect of a successful recovery fair, for his condition four hours after the operation was better than before it, and shows that the procedure did not impair his condition. Ether was the anæsthetic employed.

82 4th Street, Troy, N. Y.

MEDICAL PROGRESS.

ANTISEPTIC PROPERTY OF COFFEE.—It has been lately shown by Lüderitz, from a series of experiments conducted by him in the Berlin Institute of Hygiene, that coffee as a drink (infusion) possesses very decided antiseptic properties. Several different forms of bacteria were experimented on, and their growth was found in all cases to be interfered with by the addition of a small quantity of coffee infusion to nutrient gelatine. In pure infusion the bacteria were rapidly destroyed. The question as to what constituents exercise the antiseptic action cannot yet be answered. The caffein is certainly only active to a slight degree, the tannic acid to a greater extent, but probably of greatest importance are substances which are formed during roasting. It is interesting to note that a cup of coffee left lying in a room remains almost free from microörganisms for a week or more.—*Berlin Klin. Woch.*

TREATMENT OF A COMMON "COLD."—Salicylate of sodium in free doses gives as satisfactory results in the treatment of "bad colds" as it does in cutting short tonsillitis. Sodii salicylatis, ℥ss; syr. auranti cort., ℥ss; aquæ menth. piper, ad, ℥iv. M. Sig. A dessertspoonful every three or four hours. A dose every three hours until a free specific influence of the salicylate—tinnitus aurium—is observed—will so far control the symptoms that the aching of the brow, eyes, nose, etc., will cease. The sneezing and "running from the nose" will also abate and will disappear in a few days, not leaving, as is usual under other treatment, a cough, from the extension of the inflammation to the bronchial tubes.

Apropos: DR. PHILPOTS writes the *British Medical Journal* that when sneezing manifests itself, before any inflammatory action has been established, a single local application of salicylic acid to the irritated lining membrane of the nose will be quite sufficient, in the majority of cases, to abort a common cold. The formula suggested is: Sodii salicylatis, ℥iv; acid. boracis (pulv.), ℥j; cocainæ hydrochlor. gr. xxij. M. Mix by agitation, not in a mortar. Snuff, or draw into the nose, or preferably, use with insufflator.—*Memphis Med. Journal.*

PRACTICAL ASEPSIS.—*Asepsis of the Hands.*—Frequent washing of the hands, with or without antiseptics, irritates the skin, producing redness and chapping. It is therefore advisable, after washing and drying the hands, to rub them with one of the following pomades, which are recommended by PROF. LIEBREICH:

1.	Lanoline	5 grm.
	Vanilline	0.01 "
	Essence of rose	1 gtt.
2.	Lanoline	100 grm.
	Parafine	25 "
	Vanilline	0.01 "
	Essence of rose	1 gtt.

Asepsis of the Sick Room.—SEVESTRE advises the use of the following solution, which may be sprayed or evaporated by boiling:

Thymic acid	5 grm.
Carbolic Acid	10 "
Alcohol	100 "
Water	885 "

Asepsis of Utensils and Instruments.—It is sufficient to dip utensils and instruments in a boiling solution of carbonate of sodium (30 grm. per litre). The same solution may be used to disinfect sputa and to clean cuspidors and vessels.—*Jour. de Méd.*

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SATURDAY, MARCH 29, 1890.

MIDWIFERY AND THE MIDWIVES.

The practical results achieved by the application of asepsis and antisepsis to obstetrical practice is one of the greatest triumphs of modern medicine. No fact has been more frequently and forcibly emphasized than this, and the triumph thus gained is all the more welcome because it comes with relief to the very sufferers to whom our sympathies go out most powerfully—to child-bearing women.

Prior to the advent of our present methods of treatment, in many parts of the world, and these the very centres of the highest civilization, child-bearing had become a veritable curse to womankind, at least to those unfortunates who were obliged to take refuge in hospitals. In one of the largest hospitals of the world pregnant women learned to shun certain wards as they would charnel-houses. "Often the most heartrending scenes were witnessed when kneeling women wrung their hands and implored a release from surroundings which they knew to be pestilential." In this same department "lying-in women with pulse-beats so rapid that they could not be counted, with bellies bloated and with tongues parched by the dreadful puerperal fever, protested almost with their last breath that they were *perfectly well*, in order that they might be spared from medical treatment that they had learned was but the precursor of death."

Such were the scenes and such the condition of affairs at a time when puerperal fever destroyed more people than cholera and small-pox combined. But antisepsis has changed all this, and now, *mirabile dictu*, the lying-in patient is actually safer in one of the best conducted hospitals than she is surrounded by her friends in her own home and provided with the average quality of medical attendance. This is not because the hospital patient encounters fewer dangers in her surroundings, but simply because the protection afforded her against danger is more nearly adequate to the exigencies of the situation. In the hospital, cleanliness and real antisepsis are the daily lessons taught, and the hospital is the place where they are most readily learned. Simple as these lessons are, there are none more difficult to inculcate in the case of refractory pupils, and all skeptics and all people of moderate intelligence are refractory in this respect. Even with the most painstaking care and watchfulness hospital authorities experience very great difficulty in carrying out the minutiæ of antisepsis, without which there is no guarantee whatever of success.

The medical students of to-day are thoroughly drilled in the important field of bacteriology, and thus they become intelligent and willing pupils when it comes to the application of the principles involved in the treatment of wounds and the conduct of labor. With nurses the task is a more difficult one, for with no practical acquaintance with the vital phenomena, the bacteria, they often find it an ungracious task to regulate their habits by rules which scarcely appeal to their reason, and which require them to modify almost their entire mode of life.

There are still other classes of individuals who are difficult subjects to deal with. First there are the good, hard-headed, common sense doctors who studied medicine before the upstart bacteriologists were born—men who never encountered a bacterium in a medical practice of fifty years, and who would have little respect for a micro-organism unless it could be demonstrated to be supplied with claws and poisonous fangs. Some of these practitioners are excellent obstetricians and surgeons, for the most part, but when they do lose a patient from septic infection they have no difficulty in convincing themselves that he or she died from causes quite aside from those of microbic invasion; whereas not infrequently the skilful pathologist is able to convict such a one from the testimony of his own mouth. Then, again, there is the class of practitioners who

freely admit the teachings of bacteriology and endeavor to follow its precepts, but do so in a slipshod manner that is entirely inadequate; or, after employing the most approved methods of disinfection, vitiate all their work by a single *lapsus*.

Formerly almost any intelligent and dexterous physician was regarded as good enough to assist at a surgical or obstetrical operation, while to-day many such would not even be admitted to the operating room, from the operator's fear that he would nullify the effects of otherwise adequate antiseptic precautions.

What, then, shall we say of a class of individuals who are yearly entrusted with the lives of tens of thousands of cases which require for their successful management almost as precise and delicate methods as those employed by the surgeon who opens the peritoneum, and who are, nevertheless, in a large measure utterly ignorant of the greatest dangers that beset their charges? These individuals are the midwives of our own country. Bacteriology has set its seal upon the physician, upon the surgeon, and upon the obstetrician, but we have no evidence that its influence has been felt by the midwife. In most of the European States the importance of this subject has long been recognized, and ample protection has been afforded the public from the danger of infection at the midwife's hands. These women are first carefully trained under governmental direction and then placed under the supervision of competent authority. Their minutest duties are accurately prescribed by printed instructions, which they are bound by heavy penalties to follow to the letter.

In most parts of Europe a much larger proportion of obstetrical practice falls to the hands of midwives than here; the proportion, indeed, is often as great as 75 per cent, and the control of midwives is in one sense a more important subject in Europe than it is in the United States. But it is certainly important enough everywhere to demand our most thoughtful consideration, and it is hoped that it will not be long before our midwives are required to show a much higher degree of proficiency in their art than is the case at present. It would seem also to be a very simple and useful procedure to place in the hands of each midwife printed instructions regarding her duties toward those to whom she offers her assistance.

MEDICAL FEES.

Can there be any fixed rate of compensation for any and all kinds of service to the sick or injured? We trow not, for there are many reasons which operate against such a desideratum. First of all, there can be on the part of the profession no organization approaching the nature of a "trust," competition being too sweeping and too general. Much of the aid also is supplied by the State or corporations, and very much more is gratuitously rendered for the sake of acquiring skill or reputation. Add to these demoralizations—we use the term in its least offensive commercial sense—the unintended charities of the younger members of the profession, who are obliged to take greater risks in the matter of compensation, and we continue adding more figures to the over-long list.

Overcrowding, about which so much is written, cannot well be controlled except by the survival of the fittest, particularly when the aspirant for emoluments modestly prefers himself to his neighbor. In this connection, every physician must reflect that his calling is a personal one, and as such his work can neither be divided nor delegated. The poor employ him of necessity, and the rich are willing to pay no more than the market rates. The exceptions are in the case of the few who have a national reputation, and whose resources are drawn from an infinitely larger constituency.

There is a maxim of political economy that "wages are the same," the surplus being the increment for extra skill, reputation and other factors which do not now occur to us in the summary. The chief gain, however, is in the matter of reputation, after which the charlatan struggles so persistently. He of all others must needs make haste, for the bubble invariably bursts, the calamity being that honesty is the real sufferer in the shape of a general distrust of all science. But this is law, and as the lawyers say, therefore only an approach to justice. As such we accept it.

More frequently than prudently, the statement is made to patients that what the poor cannot do the rich must be made to do—in other words, that the rich must be made to pay for the poor. All well enough, but for the underlying immorality. Unfortunately this course is reactionary, and contrary to the best intentions, has likewise become known to the rich. In point of fact, this policy never was and never could be pursued, be-

cause every transaction must rest on a financial basis of its own. How much more rational would be the statement that the services are intrinsically worth thus much—the rebates are mere concessions to charity, friendship and personal goodwill. The braggarts always get the largest fees and have the most grateful patients, but somehow never make a show of their investments. In brief, where can there be the necessity for an appeal to class prejudices for the sake of covering up small balances for work done much below its intrinsic worth. The book-keeper is not known who publicly avows that he robs Peter to pay Paul.

Let it at once be conceded that the millionaire buys his commodities at the market value, and is not unusually lavish with his "tips," and must we say it, that competition keeps the seller within reasonable bounds. As for the princely incomes to be found within the profession, they are but few. Like royalty itself, the princes themselves dwell aloof, and the search for them would be as bootless as the Indian's chase after the setting sun.

THE ROYAL COMMISSION ON VACCINATION.

A preliminary report has been published by the Royal Commission on Vaccination of which LORD HERSCHELL is chairman. This report contains the testimony of SIR JOHN SIMON, the former chief medical officer of the Local Government Board, DR. WILLIAM OGLE, of the Registrar General's Office, DR. THORNE THORNE and others, in defense of the existing laws under which compulsory vaccination has been carried out. The revised Vaccination Act of 1867 is the controlling measure that has given to England the power to enforce public vaccination and the ability to record the saving of thousands of lives otherwise lost by small-pox. It is this Act, also that is the object of attack by the antivaccinationists, who have representation on the Royal Commission. It is this act, also, which was left by Sir John Simon on his retiring from office, as a sanitary way-mark of the administration for which he was largely responsible. He was one of the early witnesses and gave the Commission some interesting glimpses into the condition of English society before the time of DR. JENNER'S great discovery. Mr. Simon testified that while in the eighteenth century, not everybody, took the small-pox, but everybody expected to take it at some time of their lives; some were apparently exempt from the disease early in life who contracted it when advanced in years, just as there are those, in our own time who escape measles, scarlet fever and other "children's diseases" until late in life. No class in society was exempt from the malady. The presumption was that royalty would feel the clutch of small-pox not less than the peasant. The testimony of Mr. Simon showed, for instance, in the family of William III, that both his father and mother died by the disease, also his wife, his uncle the Duke of Gloucester, his cousins, the elder son and the youngest daughter of James II, while he himself had a very severe attack of it. In Austria, also, the force of the disease fell crushingly on the Court: the Emperor Joseph I died by it, as did two empresses, six archdukes and archduchesses; an Elector of Saxony died from it; Bavaria also lost an Elector, and France a King and a Dauphin; Sweden a Queen, and Russia an Emperor. In the latter part of the last century, the deaths by small-pox amounted to little less than 10 per cent. of deaths from all causes; or stated in the proportion to the population the death-rate was 305 per million. Since the passage of the compulsory acts this death-rate has fallen, with many fluctuations, and in the last decade it is stated 54 per million. In 1889, in England and Wales there were 517,936 deaths from every cause, but only 28 were registered as due to small-pox: in London only one death was recorded from that cause in that year. Looking at the effects of small-pox on children in the period that preceded the compulsory acts, it is found that the rate of mortality was 1,617 per million, while later it was only 94. But in the case of persons over forty-five years of age there has been an increased rate from variola. Hence it appears that those who were born before the passage of the laws constitute the only class that has not shared in the immense decline in the mortality, which is not far from being one-sixth part of what it was formerly. Testimony in regard to the protection afforded by vaccination to the nurses who serve in small-pox hospitals was adduced, showing that they enjoy absolute immunity from that disease, although brought into contact with it in its most virulent form; compared with them, the nurses at the fever hospitals suffer greatly both in cases and in deaths by fever. Testimony was

given by Dr. John H. Rauch, of the Illinois State Board of Health, concerning the status of vaccination in this country. He showed that although vaccination is not actually compulsory in some of the States, yet when small-pox becomes threatening, vaccinations are enforced in a wholesale fashion that is calculated to startle the antivaccination partisans of England. After the great fire at Chicago, he stated, there was great suffering, upwards of 80,000 persons were rendered homeless and were provided for in a camp. Small-pox was hovering about and a general vaccination was decided upon, and as a result 110,000 to 120,000 persons were vaccinated or revaccinated, in the camp and vicinity. Other instances were given where indirect compulsion has been applied to schools, and also in regard to immigrants with exceptionally beneficial results. In reply to the contention of the antivaccinationists that the diminished suffering and mortality from variola is really due to the general sanitary improvement of the times, Dr. Rauch gave it as his opinion and experience that sanitation has practically nothing whatever to do with either the spread or the abatement of the infection. Vaccination and isolation are the two important matters for the protection of the people; and without the due observance of these two points the people's best line of defences will have been deserted. The Commission is still engaged upon the inquiry.

This, the first, installment of the Royal Commission's work is of great value. If the remaining portions of their report shall be as strong in the defense of the much attacked vaccination, the results will be very unwelcome to those who have set the investigation in motion.

EDITORIAL NOTES.

HOME.

ASSOCIATION AND SOCIETY MEETINGS.

The American Neurological Association will hold its next annual meeting in Philadelphia, on June 4, 5 and 6, 1890.

The Iowa State Medical Society will meet at Des Moines, April 16, 17 and 18.

The Medical Society of the Mississippi Valley convenes at St. Joseph, Mo., March 20 and 21.

The Nebraska State Medical Society meets at Beatrice on May 13.

The Illinois State Medical Society will meet in Chicago, beginning May 6, 1890.

American Medical Association.—The forty-first annual session will be held in Nashville Tenn., on Tuesday, Wednesday, Thursday and Friday, May 20, 21, 22 and 23, commencing on Tuesday at 11 A.M. The addresses will be given on "General Medicine," by Dr. N. S. Davis, Chicago, Ill.; "General Surgery," by Dr. Samuel Logan, New Orleans, La.; "State Medicine," by Dr. Alfred L. Carroll, New York, N. Y.

Additional Appointments.—The following additions have been made to the Faculty of the New York Post-Graduate Medical School and Hospital: Charles B. Kelsey, M.D., Professor of Rectal Diseases; Charles H. Knight, M.D., Professor of Laryngology and Rhinology; Reynold W. Wilcox, M.D., Professor of Clinical Medicine; Dr. S. Lustgarten, formerly Privat Docent in Vienna University, Instructor in Syphilis and Dermatology.

A Creditable Appointment. — Dr. H. J. Brooks, of Dixon, Ill., appointed to the position of Superintendent of the Insane Asylum of Northern Illinois at Elgin, made vacant by the death of Dr. E. A. Kilbourne, is a man every way qualified for that important position. His culture and thorough practical experience eminently entitle him to the place, and we bespeak for the Institution an able supervision under his administration.

President of the New York State Medical Society.—Dr. William Warren Potter, the newly elected President of the New York State Medical Society, comes of a medical family. His grandfather, father and son and two uncles have been or are members of the profession. He has been for some time one of the editors of *The Buffalo Medical and Surgical Journal.*

Cremation Advancing in England and on the Continent.—The number of cremations at the Woking Crematory is increasing. In three years, 1884 to 1887, there was an annual average of eight. There were twenty-six in 1888, while last year there were forty-six. During the present year there have been several every week. At the new crematory at Paris there were thirty-five ordinary cremations in 1889, but the number of

bodies of still-births, unclaimed paupers from the hospitals and anatomical residuum is such that the incineration is going on almost constantly. At Rome, over 200 cremations were practiced in 1888, an increase over any previous year.

Medical Legislation in Alabama and Florida.—The Medical Practice Act of Alabama has been found to be ineffective for the prosecution of illegal practitioners, by reason of a failure in the enactment to prescribe a penalty. This omission will probably be remedied by the Legislature of the current year. The Medical Act for the State of Florida is also said to have a defect in that it does not specify that an examination in the practice of medicine shall be required of candidates. This oversight it is thought may be obviated by making the examination in therapeutics broad enough to embrace the omitted branch.

Dr. Lewis Morris has been appointed a member of the medical staff of the Pennsylvania Hospital, to succeed the late Dr. James H. Hutchinson.

Dr. O. W. Holmes says it is not true. The poet-physician has had it brought to his notice that a learned small girl of Boston has spoken of him as having been for many years a professor of monotony at Harvard University.

The Starling Medical College.—The forty-third session of the medical college at Columbus, Ohio, was terminated on March 6, a class of thirty-nine receiving diplomas in medicine.

The Bellevue Hospital Medical College held its annual commencement on the 10th inst., graduating a class of 144 members, said to be the largest ever graduated.

FOREIGN.

Memorials to Professor Botkin. — The memory of the late eminent Russian surgeon, Dr. Sergius Botkin, will be perpetuated in a two-fold way. One of memorial will be by means of a publication bearing his name; the weekly journal founded and conducted by Dr. Botkin, under the title of *The Clinical Gazette*, having been allowed to succumb, his son, Dr. S. S. Botkin, and other former pupils of the distinguished surgeon, have united to start a new weekly periodical, *The Bolnitschnaja Gazeta Botkina*, to be under the editorial charge of Dr. Wassiljew. The other project will undertake the establishment at St. Petersburg of a home for destitute or disabled physicians and their dependants or orphans. This memorial will take his name, it is proposed, and be known as the Botkinhaus, after the manner of that designed to perpetuate the name of the great surgeon of Göttingen by means of the Langenbeckhaus.

A Fortune from Antipyrin.—Dr. Knorr, the discoverer of antipyrin has found a mine of wealth in the late epidemic of influenza, having taken in, by means of his royalties, considerably more than a million of dollars. He gets 60 cents on every ounce produced, and the drug sells at $1.40 per ounce. This, if true, would indicate a consumption of not less than forty tons of the the article by the victims of *la grippe*.

A Newly Reported European Epidemic.—According to cablegrams from the Continent a new plague has sprung up, called nouna or noma, in Russia, Austria and Italy. It bears no resemblance to any malady of recent times. The marked feature of the attack is a stupor or prolonged sleep, of twenty-four to forty-eight hours duration. This may come on suddenly in the midst of apparent good health or may be preceded by two or three days of insomnia, headache and malaise. Fatal cases have occurred, the patient never awakening; or the stupor passes off and recovery follows. Whether the disease is contagious, or otherwise, is not yet known.

Dr. Michael Foster has been elected a member of the Italian Reale Accademia dei Lincei in the Section of Physical, Mathematical, and Natural Sciences. Among the other foreign members elected at the same time were M. Berthelot, Dr. A. Chauveau, and Professors Karl von Nægeli and W. Kühne.

Death from Fright.—An extraordinary case of death from fright is reported from Rangoon. It appears that a young Eurasean lad was crossing the road, when the rumbling of the wheels of a mail car frightened him, and he dropped down lifeless, the cause of death being syncope.

Cairo Sanitation.—A Sanitary Engineer, who has been commissioned to report on measures to improve the sanitation of Cairo, recommends a sewer system of 240 miles in extent, costing half a million sterling.

TOPICS OF THE WEEK.

SANITARY IMPROVEMENTS IN NASHVILLE.

It will be a matter of interest to our readers generally, and especially to those who propose to visit the city at the next session of the American Medical Association, to learn with what success the work of sanitary reform has been carried on in Nashville during the last few years.

We quote from the *Cincinnati Lancet Clinic* of Jan. 25, 1889, an article which it credits to the *N. Y. Medical Record* as follows:

"*What Sanitary Reform can do for a City.*—The secretary of the Tennessee State Board of Health, Dr. J. Berrien Lindsley, has prepared an article for the forthcoming Report of the Board which shows in a striking manner how the health of a large community can be benefitted by the intelligent efforts of a few active individuals, who have the support of public opinion."

The article deserves to be studied by sanitarians everywhere—if only as an encouragement to them to persevere in their apparently thankless task, often against the greatest odds.

"Dr. Lindsley's paper is a history in brief of the work of sanitary reform in the city of Nashville, which work was begun in 1874, the immediate incentive thereto being the devastation wrought by the last cholera visitation.

"The Board of Health, as organized in Nashville, consisted of the Mayor, *ex officio*, and of four physicians, chosen by the City Council, with a medical Health Officer devoted exclusively to the work. The city was then small and very poor; hence the Board moved cautiously. No extravagant system of sanitary engineering was urged, no bonds issued, no debt incurred. The first steps were the registration of deaths and thorough local sanitation. Rigid house-to-house inspection by first-class officers was steadily pursued. Health ordinances impartially and uniformly enforced. A complete sanitary survey of Nashville was taken early in 1877, a thing which had not at that time been attempted in any southern city, and, indeed, in only one or two in America. Its value can hardly be computed. Besides giving that information without which a Board of Health moves in darkness, it is an educator without equal. An intelligent and respected member of the police force, well known and well liked by all the community, visited every house and every building in detail. With suitable memorandum books he entered the results of his inquiries. Thus, in a few months, every one in Nashville was initiated into the work undertaken by the Board—that of making Nashville a city renowned for health and proof against epidemic scourges."

"During the epidemic of yellow fever in Western Tennessee, in 1878, Nashville became a veritable city of refuge, and its Board of Health had an opportunity to demonstrate the efficiency of individual isolation and perfect sanitary preparation. The heathfulness of the city at this time was so universally ascribed to the efforts of the Board of Health that the citizens gave them an ovation as a mark of gratitude and public appreciation of their services. This public demonstration was, of course, of far-reaching benefit in impressing upon the entire community the undoubted value of sanitary reform.

"In the fall of 1883 the Board of Public Works came into existence, and at once began the work of remedying the great defects made apparent by the sanitary survey. These were especially the deficient water-supply; the almost total lack of drainage; the miserable condition of the alleys; and the pressing need of improved streets and sidewalks in many portions of the city. The progress made in each of these lines has been progressive and most satisfactory. The city has now twenty-five miles of sewers, and the new water-works, nearly completed, will furnish a daily supply of thirty million gallons.

"But of more interest than a mere statement of what has been done in the way of sanitary improvement is a comparison of the results following these improvements. This can be stated in very few words:

"In 1877 Nashville occupied an area of scant three miles, with a population of 27,000, and a death-rate of 34.55 per 1,000 yearly. Now it has an area of 4,021 acres, or six and one-third square miles, with a population of 68,531, and a death-rate of 15.31.

"As Dr. Lindsley justly says, this is progress. It is true that Nashville is favored by its position, and it would be a disgrace were it not a healthy city; but that should be no cause for discouragement for other less favored localities. Even the city of Mexico, built as it is almost in a swamp, is destined, without doubt, to become one of the healthiest cities in the world when the huge sanitary work now in course of construction is completed. Nashville was not a healthy city before Dr. Lindsley and his associates took hold of it, and it is now what they, and others inspired by their zeal and enthusiasm, have made it; and there is no valid reason why every other city and town in the country should not be improved in the same way, if only the right man can be found to undertake the task. They certainly ought to be urged at least to try, after reading what Nashville has accomplished quietly and as a result of patient effort."

SIR WILLIAM GULL.

The English newspapers are unusually rich in gossip regarding the late Sir William Gull. Among these the *Pall Mall Gazette* tries its more than "'prentice hand" at an analysis of the causes of his success. It credits him with being "one of the ablest, most original and striking personalities which a somewhat conventional profession has produced in this generation. Everything about him was picturesque; his humble origin as son of a village trader; his Napoleonic cast of face and feature; his brilliant conversation, teeming with epigrams, paradoxes and quotations; his extreme simplicity of life at home, and his influence and reputation at court and in "society," combined to make him one of the most notable and enigmatical personages of the day." This much-read Gazette alludes to his career as beginning with a chance introduction as a boy-guide to the resident governor of Guy's Hospital, his subsequent installation in the Blue-Coat School, and then his drudgery at the gallipots of Guy's, in all of which relations he conducted

himself with a most "sagacious profundity of manner." It pictures him as an orator dealing in paradoxes, a lecturer from whom a lucid diagnosis was always to be expected, a nihilist in therapeutics, the friend of the scientist, and the idol of all the duchesses. Our authority tells how he was wont to refresh his memory with notes of former consultations before the patient was ushered into his presence, and then dumbfounded him with a "superhuman retentiveness of memory" and "an intense personal interest in the case." Yet, with all these jugglerics, Sir William was a conscientious student, devoted to his duties, and of Spartan simplicity in his habits of life. The added accomplishments of the courtier and diplomat, the advantages of a "manly and massive type of comeliness," a cautious zeal for his reputation, and a certain skill in the arts of pleasing, brought more grist than is usual to the mills of most men. More of Richelieu than a Bismark, he belonged to that type of our race which is destined to succeed anyhow, anywhere, and in any capacity.

BACTERIOLOGICAL STUDY IN VIENNA.

The Vienna correspondent of the *Medical News* writes as follows:

Bacteriological investigation goes on constantly with undiminished vigor, and at last the subject of malaria seems settled. It is taught here that the plasmodium malariæ is the cause, that it enters the blood, taking up its abode in the red corpuscles, and gradually growing therein. At first it is very small, one-fifth the size of the corpuscle, but as it grows it takes up pigment, which is deposited in small granules in its periphery. It grows until it completely fills the corpuscle, and then it divides into a number of daughter cells that repeat the same process, and at the division the pigment granules are set free in the blood, causing the well-known *melanosis malariæ*. There is very little malaria in Vienna, but Dr. Bamberger, Nothnagel's first assistant, told us that in every case they succeeded in finding the plasmodium. The use of quinine diminishes the number of the organisms very markedly, and in case of cure they can no longer be found. They are also more numerous just before the chill, and immediately afterward are hard to find, for then the division has taken place, and the small cells escape observation far more easily. Golgi, an Italian pathologist, has written an excellent monograph on this subject.

EFFECT OF INFLUENZA ON THE MORTALITY OF THE STATE OF NEW YORK DURING JANUARY.

The reports of the New York State Board of Health show that the number of deaths in that State during the month of January was nearly 5,000 greater than the average for this month in the past five years, the mortality being greater by 2,000 than that for July, the most fatal month in the year. The marked increase is due to the occurrence of epidemic influenza, which began in December. While but a few hundred deaths are attributed to this cause directly, its influence on the mortality of other affections was very great.

Acute respiratory diseases are given as the cause of three times as many deaths as the average in January, and phthisis showed an increase of 70 per cent. in mortality, while in nervous, circulatory and digestive diseases the death-rate increased from 37 to 40 per cent. On the other hand, the number of deaths due to zymotic diseases was less by 340 than in January, 1889, and the percentage of deaths of children under five years of age was less by about one-half.

Of the cities in the State, Albany shows the greatest death-rate, 41.12. New York's rate was 34.44, and Brooklyn's 29.72. The largest death-rate in the State was in the town of New Rochelle, Westchester county, namely, 52.—*Boston Medical and Surgical Journal.*

COINCIDENT INTRA- AND EXTRA-UTERINE PREGNANCY

We are indebted to the Vienna correspondent of the *Medical News* for the report of the following remarkable case:

A few days ago, Dr. Rosthorn, assistant at Professor Chrobak's gynecological clinic, operated on a case of apparent ovarian cyst. Eight weeks before, the woman had been delivered of an eight months' child, normal labor, and had been perfectly well until three weeks previous to the operation. The operation was made in the ordinary way, and the supposed cyst removed. At one portion of it a peculiar cord-like process was attached. Rosthorn examined the other ovary—it was normal—but, while examining it, a small hand slipped out from between the intestines. This was seized, and a full-sized child was removed from the abdomen, and to its umbilicus was attached a cord exactly similar to that found on the cyst. They then looked for the fœtal membranes, and found them very deep and everywhere adherent to the intestines and peritoneum. The child's skin was nearly normal, though slightly macerated. Then the membranous sac was brought up and sewed to the peritoneum, just as the stump is treated in extra-peritoneal amputation of the uterus; the abdominal walls were united, and the sac dusted with salicyl-tannin. The woman rallied, and now, seven days after the operation, is doing very well. The careful examination of the removed cyst showed that the tumor was merely the placenta coiled up where it had been fastened to the left Fallopian tube, and the case now resolves itself as follows: There was an extra-uterine pregnancy, with the fœtus in the left Fallopian tube, and this fœtus was carried beyond term, and died. Throughout the time there were no symptoms from this extra-uterine pregnancy, and an intra-uterine pregnancy went on nearly normally at the same time. It cannot be established, though it is probable, according to the authorities here, that the two children were really twins, and one developed within, the other outside of, the uterus. Thus it stands without a parallel in the history of obstetrics, and the full report by Rosthorn will be looked forward to with great interest.

THE PORTRAIT OF A SURGEON GIVEN TO A CHURCH.

The *London Medical Recorder* states that a grateful patient of Professor Billroth's has made a present to a church, in the neighborhood of Vienna, of a portrait of the distinguished surgeon, delineating him as he appears in his operating-room.

PRACTICAL NOTES.

THE USE OF ALCOHOL IN HOSPITALS.

A very interesting report has been presented to the British Medical Temperance Association by Drs. Morton Moir and Pearce, on the administration of alcohol in hospitals. The committee have drawn up a series of tables full of instructive figures, instituting a comparison between the amount expended under this head in 1863 and in 1888. The remarkable fact is noted that in these twenty-five years there has been, from the returns made by 113 hospitals, an increase of 300 per cent. in the charge for milk and a decrease of 47 per cent. in the charge for alcohol. A second table gives returns from sixty hospitals of which no previous record could be found. On the basis adopted by Dr. Fleetwood Buckle, in his report on 1863, these sixty hospitals showed a decrease of 39 per cent. in the expenditure for alcohol per bed. A third table shows the comparative alcoholic charges per bed in 1863 and 1888 respectively. In seventy-three hospitals there had been an increase of 2,108 beds, and a decrease of total average cost per bed of £78 3s. 5d. Beds have thus increased at the rate of 25 per cent., while the amount expended on alcohol has decreased at the rate of 47 per cent. Only eight of this group of hospitals showed an increase in the quantity of alcohol consumed. In the remaining sixty-five the decrease ranged from 30 to 83 per cent. In the London Fever Hospital, while milk has risen from £150 to £650 per annum, the disbursements for alcohol were at the rate of only 15s. 2d. per bed in 1888, as compared with £3 5s. per bed in 1863. In St. Bartholomew's Hospital the milk bill had gone up from £600 to over £2,000, while the alcohol bill had gone down from £1,446 to to £953. These statistics prove that there has been a gradually increasing rational medical administration of alcohol, the credit of which must be awarded to the medical staffs of the hospitals, a fact which affords yet another proof of the lively interest in the promotion of temperance taken by the medical profession.—*British Medical Journal.*

IODINE AS A REMEDY FOR VOMITING.

M. Darthier (*L'Union Médicale*, Dec. 10) bears testimony to the value of tincture of iodine administered internally for the relief of vomiting, a remedy recommended by the late Prof. Lasegue in the vomiting of pregnancy. The author had observed its use in nineteen cases, eleven of which were tubercular subjects, and found that it is of more value in the vomiting of early phthisis than in that of the later stages of this disease. At the same time he gives instances of advanced cases with obstinate vomiting where the symptom was largely controlled by the drug. Amongst other cases he gives one of bronchial dilatation (subsequently fatal from acute tuberculosis) in a female who for three weeks had regularly vomited after every meal. From the date of commencement of the use of the drug she ceased to vomit, and after a week's treatment, which was not productive of any signs of iodism, was completely cured of the symptom. Apart from phthisical vomiting, M Darthier finds it useful in alcoholic gastritis, in ulcer of the stomach, and in the vomiting of pregnancy and of chlorosis, instances of which are recorded. He says that the majority of the patients take the iodine with pleasure; it often produces an agreeable sense ef warmth in the stomach, lasting from five to twenty minutes. The dose is ten drops dissolved in 125 grams of water, taken in three portions immediately after meals. In a certain number of cases symptoms of iodism are produced, chiefly coryza; but a good many patients do not experience any such inconvenience from it.—*The Lancet.*

ANTISEPTIC TREATMENT OF GASTRO-ENTERITIS.

A writer in the *Revue Générale de Clinique et de Thérapeutique*, January 23, 1890, advises creolin in the treatment of gastro-enteritis, and prescribes it as follows:

℞ Creolin 8 minims.
Pulverized sugar 75 grains.

Mix, and divide into ten powders, one of which may be given every two or three hours.

Or,

℞ Creolin 1 to 2 drops.
Syrup 1 ounce.
Peppermint water 2 ounces.—M

Of this a teaspoonful may be given every one or two hours.

Asepsis of the lower bowel may be secured by enemata of 1 oz. of sodium benzoate in one quart of water; boric acid 1 to 5 drachms, sodium salicylate in the same quantities, or resorcin 7 grs. in a quart of water. Enemata of equal parts of lime-water and distilled water may be used for the same purpose.—*Medical News.*

ATROPINE IN ENURESIS.

In the *Archives of Pedriatics* for October, 1889, Dr. William Perry Watson reports thirty cases of incontinence of urine occurring in children from 15 months to 3 years of age, in nearly all of which cure was produced by the use of sulphate of atropine. The solution was composed of one grain of atropine to an ounce of distilled water, and one drop of this solution was given for each year of the age of the child. It was given at 4 and 7 o'clock in the evening. Some of these cases occurred in Dr. Watson's private practice, and others in the public institutions which were under his care.—*Therapeutic Gazette*, December 16, 1889.

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, February 21, 1890.

V. P. GIBNEY, M.D., CHAIRMAN.

DR. FRANK HARTLEY presented a case of

DOUBLE CONGENITAL TALIPES EQUINO-VARUS.

The patient, a male, 20 years of age, and a cigarmaker, was admitted to the Roosevelt Hospital on May 27, 1889. This deformity, which has been present since birth, increased between the sixth and twelfth years, and although it has not caused much pain, he walked with a curious shuffle of the foot from side to side. He was very desirous of an operation. Examination showed that there was about two-thirds of the normal motion of the ankle-joint, and that the neck of the astragalus was twisted so as to look directly inwards, and the os calcis was placed obliquely to the tibia. He had the peculiar pallor of the skin and mucous membranes common to cigarmakers. Heart, lungs and kidneys were normal.

On June 5, a cuneiform osteotomy was performed over the greatest convexity of the left foot. The wedge of bone removed consisted of portions of the tibia and fibula, the whole of the astragalus, and enough of the cuboid, scaphoid and os calcis to allow of a reduction of the deformity. The foot was placed at once in proper position. Healing was normal, and on July 25 a similar osteotomy was done upon the other foot. The wedge removed consisted, as in the other foot, of a portion of the tibia and fibula, the whole of the astragalus and scaphoid, and portions of the os calcis and cuboid. On August 24, union in the left foot was good, and fairly good in the right foot. By the middle of October, he was allowed to walk about the wards, and on November 29 he was discharged from the hospital, and has since been under observation in the outpatient department. The muscles are gaining rapidly in size and strength under daily applications of electricity. Crutches are only used for long walks, and judging from the progress so far, these can be discarded in a month or two, and possibly in four months, even the retentive apparatus which he now wears can be removed. Dr. Hartley did not consider this deformity the result of an arrest of development, but of pressure effects within the uterus. He believed these cases of secondary congenital club-foot could usually be cured by mechanical measures, although the severest forms require, as in the present case, an operation.

DR. JOHN RIDLON presented a male patient, 18 years of age, who came under observation last April for a deformity of both feet which had made walking difficult and painful for the previous two years. There was cavus and equinus, and on walking, varus of both feet. There were no reflexes on "point pressure." On April 4, 1889, Dr. George S. Huntington divided the plantar tissues of the right foot by open incision, and having forced the foot into proper position by Thomas' wrench, divided the tendo Achillis subcutaneously. On May 8, a similar operation was done upon the left foot, and was followed by primary union. The patient is now able to walk well and without discomfort.

Dr. Ridlon also presented a boy of 13 years, who first came under his observation on May 12, 1889, having begun to limp about three months previous. The foot was found to be held rigid in the position of valgus by contraction of the extensor and peroneal muscles; but when the patient was etherized with the intention of dividing these tendons, the foot could be easily placed in a position of equino-varus. It was retained in this position by plaster of Paris for about two months. There was no pain following this manipulation and replacement of the foot, and when the plaster was removed, motion at the ankle and tarsal joints was normal, and the limp had disappeared. On October 4, he was found to have relapsed into his former condition. The foot was placed in the best possible position, and has since then been retained in this position by plaster of Paris.

DR. V. P. GIBNEY presented a lady 25 years of age, who had been referred to him in December, 1887. She walked on the outer borders of the feet, where large callosities served as a base of support. The soles of the feet looked backward and upward, and her gait was especially reel-like. There were extensive cicatrices over the tendo Achillis, and it was quite impossible to correct the deformity by manual force.

On December 26, 1887, a cuneiform osteotomy after the method of Dr. Charles T. Poore was performed; but after extensive section of the bones and free division of the deltoid ligament, and of a few resisting points of the plantar fascia, it was not possible to place the foot in proper position. A free lateral incision was then made and muscles and tendons divided after the manner of Dr. Phelps. After some further difficulty, a good position was secured, and the foot was placed in a Thomas club-foot shoe, over which plaster of Paris was applied. The dressings were removed on the following day on account of free oozing, and by December 30, it was found absolutely necessary to put her in charge of a trained nurse, and from this time until February 16 she suffered from septicæmia. At the end of this period the wounds were healing rapidly, and the foot was in excellent position. On February 22, having secured her admission to the Hospital for Ruptured and

Crippled, a similar cuneiform osteotomy was done upon the other foot, which was then brought into good position and dressed antiseptically, and covered with a plaster of Paris bandage. Nearly all the wound healed by first intention, and recovery was uninterrupted, although retarded by the presence of corns and tender callosities. She gets on very well now, although the gait at present is very much modified by the condition of these corns.

DR. W. H. BERG took an exception to Dr. Hartley's statement that the deformity in his patient was probably caused by too little space in the uterus; he thought this theory had been pretty generally abandoned.

DR. HARTLEY replied that he did not think this was the case, as in Bessel-Hagan's book on the "Etiology and Pathogenesis of Club-Foot." considerable space was given to this very thing.

DR. N. M. SHAFFER had found that a certain number of cases of adult club-foot yielded to mechanical measures; while in many of those which were only amenable to operative treatment, the patient's condition untreated was often as good as that obtained by operation. One great obstacle to the treatment of these cases is the cicatrices from previous operations.

DR. H. L. TAYLOR said that a new instrument just perfected by Dr. Bradford, of Boston, offered another alternative to methods already in use. By it, the surgeon was able to obtain a very perfect grasp of the foot and thus twist it into position.

DR. SAMUEL KETCH remarked that Dr. Ridlon's second case showed decided reflex spasm and pain on rotation of the foot, and he considered the case one of valgus, symptomatic of some bone lesion. The rapid relapse seemed to favor the view of the osteitic origin of the trouble.

DR. BERG thought the bone lesion was probably at the point where the outer malleolus impinges upon the astragalus. There was certainly no muscular trouble present.

DR. SHAFFER felt sure there was some bone irritation present, and as it was more resistant to adduction than to the other movements, when the astragalus and scaphoid were crowded together, he thought the lesion was probably located at the articulation between the astragalus and scaphoid, but not involving the ankle-joint itself. He had had a similar experience in regard to the sudden disappearance of the deformity after etherization; but he had not suspected a tubercular osteitis, because he had never seen such cases go on to suppuration. They are more like inflammatory flat-foot, running a long course, and ultimately terminating, not in anchylosis, but in recovery with pretty good function.

DR. A. B. JUDSON was likewise of the opinion that the case was one of articular osteitis, and its duration would favor this view. The circulation of the limb being normal, eliminated the presence of a nervous lesion.

DR. RIDLON, in closing the discussion on this case, said he could not conceive it possible that a tubercular osteitis could be subjected to such vigorous manipulation without being followed by some evil consequences. When the spasm has existed, the patient has always complained of pain on attempted motion, but he walks and jumps around like other boys. Is it possible that an osteitis can exist for a year, as this has done, under such treatment, without an aggravation of the disease?

DR. W. R. TOWNSEND presented for Dr. Gibney the left knee of

A CASE OF DOUBLE HIP-JOINT DISEASE,

Which had been removed post-mortem. The joint had been immobilized in a plaster of Paris splint for eighteen months. There was no disease at the knee when the first plaster had been applied, and the long confinement of the joint showed that no gross changes had occurred in the bones or cartilages. The synovial membrane was removed and found apparently healthy, and the joint contained a small amount of synovial fluid when first opened. The motions were limited to an arc of about fifteen degrees, and yet after the ligamentum patellæ was divided, extension and flexion could be made to the full limit. The lateral ligament did not seem contracted.

DR. BERG said that the specimen only showed that the joint surfaces were normal, but it did not show that the soft parts had not been affected by prolonged immobilization. The specimen was of medico-legal interest, because it was sometimes claimed that real and permanent disability had resulted from such prolonged immobilization.

DR. SHAFFER feared the results of prolonged immobilization, for, in an experience with seven cases of ununited fracture of the femur, it had resulted in effusion into the knee-joint. He had employed in these cases an apparatus which made traction upon the thigh, but which was not applied below the knee.

DR. RIDLON thought we should distinguish between the immobilization of cases of fracture adjacent to joints, and of healthy joints which were positively free from any injury, for the results in the two classes of cases were widely different. The traction apparatus employed by Dr. Shaffer might have produced constriction of the limb, and so led indirectly to effusion into the joint.

DR. JUDSON said anchylosis was the result of inflammation, and immobilization of an inflamed joint, or the arrest of function was a primary antiplogistic.

DR. HARTLEY said that in fractures in the lower part of the thigh, where there was a possi-

bility of hæmorrhage into the joint, passive motion should be begun as soon as possible; but in fractures high up, with very little possibility of injury to the joint, longer immobilization was permissible. It is often very difficult to estimate the amount of injury to a joint at the time of a fracture or other severe injury.

Dr. Taylor said that he had never hesitated to immobilize a healthy joint for any length of time that might be necessary, and he had never seen any bad results from it.

Dr. Ridlon described an easy and inexpensive method of producing the flat-foot plate used by Dr. Whitman. The usual method is to have an iron foot made, on which the plates are hammered out. Recalling the copper-plated plaster casts recently exhibited to the Section by Dr. A. M. Phelps, he had taken a plaster of Paris cast to Lovejoy of 45 Rose Street, who had coated it with a solution of silver, and then, by means of electro-deposition, had obtained a copper plate of the desired thickness, and at a cost of only $1.50.

The copper plate so prepared was exhibited.

DOMESTIC CORRESPONDENCE.

Death of the First Vice-President of the American Medical Association.

To the Editor:—As Secretary of the University Medical College of Kansas City I am instructed to inform you of the death of its President and Professor of Surgery, John W. Jackson, M.D., who was the first Vice-President of the American Medical Association; he died on March 13 of embolic pneumonia resulting from pyæmia (probably), at the age of 58. He was the chief surgeon of the Wabash railway system, and last year was President of the National Association of Railway Surgeons. Emory Lamphear, M.D.

Kansas City, Mo., March 13, 1890.

NECROLOGY.

John Jacob Crane, M.D.

Dr. John Jacob Crane, who died in New Haven, Conn., was for many years a prominent physician of New York City, having been for more than a quarter of a century one of the visiting surgeons to Bellevue Hospital. He was a graduate of Princeton College in 1840, and of the College of Physicians and Surgeons, New York, four years later. About five years ago he retired from active practice and made his home at New Haven. The deceased was in his seventieth year at the time of his fatal illness, which terminated March 4.

MISCELLANY.

Arrangements for Visiting Mammoth Cave.—The Louisville & Nashville R. R. Co. offer to all who may desire to visit the Mammoth Cave this privilege—"All who may attend the meeting can stop over at Mammoth Cave Junction going to Nashville, by notifying our conductor between Louisville and the Junction of their intention to do this; he will then permit them to retain their tickets for transportation on another train from the Junction to Nashville. Before leaving Mammoth Cave, the tickets should be presented to our agent at the Mammoth Cave Hotel, who will endorse them, making them good for passage to Nashville even should the limit have expired. If it is not convenient for all to visit the Cave upon the south-bound trip, we can arrange for such visit when returning from Nashville, but this will not be arranged until the Secretary of the Association notifies the Company that some in attendance wish to make this side trip after leaving Nashville."

The Tenth International Medical Congress.—It is announced that the following Scotch Committee has been appointed to coöperate with the President and the General Secretary: Mr. Joseph Bell, Mr. Geo. A. Berry, Mr. John Duncan, Prof. T. R. Fraser, Prof. W. T. Gairdner, Dr. G. A. Gibson, Dr. P. M. Bride, Sir George H. B. Macleod, Dr. Peel Ritchie, Prof. A. A. Simpson, Prof. Grainger Stewart, Dr. J. B. Tuke and Sir William Turner.

For the Information of Persons Desiring to Enter the Medical Corps of the U. S. Navy.—A candidate for examination and appointment in the Medical Corps of the Navy must be between 21 and 26 years of age, and must apply to the Honorable Secretary of the Navy for permission to appear before the Naval Medical Examining Board (now in session at the U. S. Naval Hospital, Brooklyn, N. Y.)

The application must be in the handwriting of the applicant, stating age and place of birth, also the place and State of which he is a permanent resident, and must be accompanied by letters or certificates from persons of repute, testifying, from personal knowledge, to his good habits and moral character, and that he is a citizen of the United States.

FORM OF APPLICATION.

————————, 189

To the Honorable Secretary of the Navy, Navy Department, Washington, D. C.:

Sir:—I request permission to be examined for an appointment as Assistant Surgeon in the United States Navy.

I was born at——, and was —— years of age on the—— day of ——, 189—, and am a citizen of the United States, residing in ——, county of ——, in the State of ——.

I enclose herewith certificates as to moral character, habits and citizenship.

Very respectfully, ————————

If, in reply to the above, the candidate receive a permit, he will notify the President of the Board of the fact and request him to appoint a time for his examination.

Candidates will be expected to present to the Board testimonials of educational and professional fitness.

The Board is required, under oath, to report on the physical, mental, moral and professional qualifications of the candidate; so that the examinations are necessarily rigid and comprehensive, though simple and practical, and not beyond the attainments of any well educated physician.

A successful candidate, upon the completion of his examination, will be notified by the President of the Board that he has been found qualified.

An applicant found "not qualified" may be allowed a second examination after one year, but not a third.

No allowance will be made for the expenses of persons

undergoing examination, which, if uninterrupted, is usually completed within a week.

Appointments will be made as vacancies occur, and in the order of merit reported by the Board, but a qualified candidate not appointed within a year must be reëxamined.

The officers of the Medical Staff of the Navy are as follows: Medical Directors, Medical Inspectors, Surgeons, Passed Assistant Surgeons and Assistant Surgeons.

Vacancies in these grades (by death, or retirement at the age of 62 years) are filled in the order of seniority, and for each step of promotion a physical and professional examination is required by law.

The pay of an Assistant Surgeon in the Navy is $1,000 per annum "on leave or waiting orders," $1,400 "on shore duty," $1,700 "at sea," and, when at sea, one ration at 30 cents per diem in addition.

Eight cents a mile is the allowance when traveling under orders.

ORDER OF EXAMINATION.

1. Physical. 2. Written. 3. Oral. 4. Clinical. 5. Practical.

The Physical Examination will be very thorough, and the candidate will be required to certify, under oath, that he is free from any mental, physical or constitutional defects, hereditary taint, or disability of any kind that would be liable to interfere with the efficient performance of duty.

Written Examination.—The candidate will be required to address a letter to the Board of Examiners, stating concisely—

1. The date and place of his birth; the school, institution or college at which he received his general education; the several branches studied, including his knowledge of general literature, and of the ancient and modern languages; the exact title of the medical school or schools at which he received instruction, and, if an Alumnus, the date of his graduation; the name and place of residence of his preceptor and the time when he commenced the study of medicine; also, the titles of the text-books studied or read on Chemistry, Anatomy, Physiology, Histology, Materia Medica, Pharmacy, Therapeutics, Theory and Practice of Medicine, Principles and Practice of Surgery, Minor Surgery, or Mechanical Therapentics, Medical Jurisprudence, Toxicology, Obstetrics, Hygiene, Biology and Physics.

2. The opportunities he has had of engaging in the practice of medicine, surgery and obstetrics, or of receiving clinical instruction; or whether he has or has not been a resident physician or interne in a civil or military hospital.

3. The number of subjects or parts of subjects he has dissected; what opportunity he has had to become familiar with minor surgery and bandaging, chemical and pharmaceutical manipulations, and the physical properties of drugs.

The candidate will append to this letter his name in full, post-office address, and his local address at the date of the examination.

A thesis or short essay must next be written (without reference to notes or books) upon some professional or scientific subject indicated by the Board.

Written answers will then be required to twelve or more questions, propounded by the Board, on the following subjects:

Anatomy, Histology, Physiology, Surgery, Theory and Practice of Medicine, Obstetrics, Materia Medica, Chemistry, Hygiene, Medical Jurisprudence, Toxicology and Physics.

Oral Examination.—The candidate will be examined orally upon his literary and scientific acquirements, including general history, natural science and English literature, and professionally upon Anatomy (general, special and surgical), Histology, Physiology, Theory and Practice of Medicine, Principles and Practice of Surgery, Chemistry, Legal Medicine, Toxicology, Materia Medica, Therapeutics, Pharmacy, Obstetrics and Diseases of Women and Children, Hygiene, Microscopy and Physics.

Candidates possessing special knowledge of the higher Mathematics, Astronomy, Geology, Botany, Zoology, Literature, Art and Ancient and Modern Languages, will be given full credit for their proficiency.

The Clinical Examination of patients will be made by the candidate at a Naval Hospital, and will include the use of the Microscope, Thermometer, Laryngoscope, Ophthalmoscope and other aids to physical diagnosis; after which he will be required to submit a written clinical report on one or more medical or surgical cases.

The Practical Examination will comprise surgical operation on the cadaver, the application of splints, bandages and surgical dressings, the use of the microscope (for clinical purposes, and the recognition of pathological or other specimens), and chemical and pharmaceutical manipulations.

A candidate may withdraw at any period of the examination, with the consent of the Board, and may at a future time present himself for re-examination.

The Board may conclude the examination—written, oral or practical—at any time, and may deviate from this general plan in such manner as it may deem best to insure the interests of the naval service.

WILLIAM C. WHITNEY,
Secretary of the Navy.

LETTERS RECEIVED.

Dr. J. W. Holland, Philadelphia; Upjohn Pill & Granule Co., Kalamazoo, Mich.; Pope Mfg. Co., Boston; W. J. Dornan, Philadelphia; W. T. Hannaford, London, Eng.; Dr. L. W. Baker, Baldwinsville, Mass.; J. Walter Thompson, New York; Dr. T. W. Briggs, Nashville, Tenn.; Dr. E. P. Brewer, Norwich, Conn.; Chas. D. Pearson, Indianapolis, Ind.; Dr. H. K. Teft, Topeka, Kan.; Dr. Jno. H. Pope, Lithia Springs, Ga.; Dr. Henry B. Baker, Lansing, Mich.; L. Bruck, Sydney, N. S. W.; Reed & Carnrick, New York; Dr. Kent K. Wheelock, Fort Wayne, Ind.; Dr. T. L. Wright, Bellefontaine, O.; Gustav E. Stechert, New York; Dr. J. G. McDougal, New Lexington, O.; Dr. J. H. Yarnall, Washington; D. M. McCreary, Dayton, O.; Dr. T. A. Ashby, Baltimore, Md.; Dr. J. W. Wright, Columbus, O.; A. A. Marks, New York; Dr. P. H. Hambaugh, Springfield, Ill.; The Gazette, Janesville, Wis.; Dr. C. N. Fowler, Youngstown, O.; Dr. A. W. Nelson, New London, Conn.; Leonard Scott Publication Co., New York; Dr. W. C. Bane, Pittsburgh, Pa.; John E. Ruebsam, Washington; Dr. W. H. Wathen, Louisville, Ky.; Elice Bros., Galena, Ill.; Dr. R. J. Dunglison, Philadelphia; Dr. Wm. Barton Hopkins, Philadelphia; Nashville, Chattanooga & St. Louis R'y, Nashville, Tenn.; W. D. Kline, Nashville, Tenn.; E. J. Knowlton, Ann Arbor, Mich.; Dr. W. P. Hart, Hope, Ark.; Dr. M. L. Mayo, Huntington, W. Va.; W. T. Arnold, Reading, Pa.; Dr. J. M. Latta, Millerton, Kan.; B. F. Hart, Marietta, O.; Dr. D. K. Dickinson, Lead City, Dak.; Dr. D. S. Thurston, Dallas, Tex.; J. A. Flexner, Louisville, Ky.; Dr. S. H. Gump, Bedford, Pa.; Dr. Cunningham, Cambridgeport, Mass.; Dr. H. D. Wyman, Morenci, Mich.; Dr. A. B. Gardner, Denison, Tex.; Dr. T. J. Weed, Cleveland, O.; A. Hoeffer, Chicago; Netherlands American Steam Navigation Company, New York; Dr. S. E. Burroughs, Allison, Ia.; Dr. D. T. Brown, Michigan City, Ind.; The Maltine Mfg. Co., New York; Dr. E. Harned, Custer, Ky.; Dr. Wm. H. Lyford, Port Byron, Ill.; Geo. P. Rowell & Co., New York; Sharp & Dohme, Baltimore, Md.; Gladstone Lamp Co., New York; Dr. Edward S. Woods, Boston; B. Glick, Kansas City, Mo.; H. H. Johnson, Atlanta, Ga.; Dr. W. R. Fringer, Pana, Ill.; Parke, Davis & Co., Detroit, Mich.; Dr. Fairbank Allport, Minneapolis, Minn.; Thos. Cook & Co., New York; Thos. Leeming & Co., New York; Dr. H. W. Shove, Woodbury, Conn.; Dr. E. M. Patton, Quincy, Ill.; Dr. E. H. Cooper, Galesburg, Ill.

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ADDRESSES.

ON THE APPROACHING REVISION OF THE UNITED STATES PHARMACOPŒIA.

Annual Address read before the Kings County Medical Association February 11th, 1890, by the Retiring President.

BY E. R. SQUIBB, M.D.,

OF BROOKLYN, N.Y.

The United States Pharmacopœia, in common with other laws and standards, originated in the necessity for it. It was not created by law, has never had the support of law, nor has it ever asked for it, but was formed upon the experience and example of other countries within and by the medical profession of this country. It originated in the New York County Medical Society, in January, 1817, upon a design and proposition of Dr. Lyman Spalding to prepare for and call together a general convention of delegates from incorporated medical bodies to meet in Washingington on January 1st, 1820. This convention met at the time appointed and constructed and published the first Pharmacopœia of the United States of America, then commonly called "The American Pharmacopœia." There had been other local pharmacopœias before this, and probably the first of these was a small book of 32 pages entirely in Latin, for a military hospital of the U. S. Army in 1781, "adapted especially to our present state of need and poverty which we owe to the ferocious cruelty of the enemy, and to a cruel war brought unexpectedly upon our fatherland."

A much larger and better work was however done in "The Pharmacopœia of the Massachusetts Medical Society," published in 1808; and in 1816 the Pharmacopœia of the New York Hospital was published. But these all seemed merely to express the need for a National Pharmacopœia and on the appearance of the U. S. Pharmacopœia of 1820, they all seem to have been abandoned.

Although the U. S. Pharmacopœia never has had any legal authority, it always has had a legal standing in being respected by the courts of law, and it has generally been admitted as standard authority in legal decisions within its scope.

Originating in 1820, it has been regularly revised six times, or once every ten years, since that time, and it has been the good fortune of this writer to have participated in four of the revisions and to have served in three. The original construction of the decennial convention was by delegates not exceeding three in number from all incorporated State Medical Societies, incorporated Medical Colleges, and incorporated Colleges of Physicians and Surgeons throughout the United States, and this construction held good up to the convention of 1850, when for the first time delegates from incorporated Colleges of Pharmacy were invited. This important step of progress amounted to a reformation in the work, and the introduction of this element into the conventions and their committees has so much extended and improved the work in material as well as in detail, that the advent of pharmacy must be regarded as the most important step taken in the sixty years of progress. And, so long as a just balance can be maintained between the elements of medicine and pharmacy, so that each may check the other within its proper perogative, the Pharmacopœia is sure to be progressive and successful. With the medical element in excess it will tend to go back to the original condition of a materia medica catalogue, but with the pharmacy element in excess it will do much worse, for then it will tend to become a trade adjunct. That is, the pharmacy element being more mercantile in its character than medicine, and farther removed from the issues of life and health, is less safe for the true interests of a pharmacopœia. A pharmacopœia, in the true interests of the art of relieving suffering, had much better be a mere catalogue of simple substances than a complex mass of polypharmacy, but should be neither the one nor the other, and need be in no danger of either the one or the other provided a just balance be maintained between the two natural subdivisions of the one inseparable interest.

In the convention of 1850 another step of progress was made by inviting the heads of the Medical Departments of the Army and Navy to participate in the conventions. In the conventions of 1860 and 1870 these departments appeared by one delegate from each; and in that of 1880 the U. S. Marine Hospital Service was added, thus

giving more strength to the medical branch of the interest. If a just balance in ability as well as in the number of delegates can be maintained in these conventions, there can be no great danger to the interest involved, even though a preponderance of the medical branch would be safer. But there has been an unfortunate tendency in the medical profession to neglect or overlook that interest, while the interest of pharmacy is carefully stimulated and kept at its best. Medical delegates are appointed by comparatively few of the organizations appealed to, and the appointments which are made are often made without special selection, and even in a careless perfunctory way, whilst all the pharmaceutical organizations are fully represented by their best men, and their delegates very generally attend and are active in the proceedings. Under these circumstances it seems very desirable that the medical profession should awake to more care of this most important of all its general interests, if it would avoid the danger of losing the interest by having it perverted.

In discussing the proper method of revising a pharmacopœia, it may not be amiss to glance at the plans pursued by other nations. It happens that just now two of the most important pharmacopœias of the world are being revised—those of Germany and Great Britain.

The German Pharmacopœia is in process of revision, and nearly completed by a Commission which consists of 12 physicians, 2 Army surgeons, 6 chemists, 6 pharmacologists and 7 pharmacists or thereabouts, all appointed by the Government, and they are understood to have done the work mainly by subcommittees who report to the general sessions of the Commission; and it is understood that very little of the work,—old or new,—is accepted on other authority than that of actual trial under control of the Commission. As an illustration of what the Commission has provisionally done, the *Pharmaceutische Zeitung*, Vol. 34, No. 101, page 766, Berlin, December 18th, 1889, gives the following notice:

Articles dismissed from the present Pharmacopœia are 77 in number, including 9 Extracts, 11 Tinctures, and 4 Ointments. In this list are two articles, Aloes and Camphor, the dismissal of which will not be understood here.

Of the articles proposed for admission to the new Pharmacopœia eighty-eight have been rejected. Among these rejections we find several that have some popularity here. For example, it will surprise many to find that the following articles have been weighed in the German balance and found wanting: Amylen Hydrate, Apiol, Boroglycerin, Creolin, Eucalyptol, Fluid Extracts of Cascara Sagrada, Castanea, Damiana, Gelsemium, Cotton Root, Grindelia, Hamamelis, Corn Silk, Wild Cherry, Sarsaparilla and Black Haw; also Hypnon, Lanolin, Methacetin, Nitroglycerin, Pyridin, Saccharin, Somnol and Sulphate of Spartein.

The British Pharmacopœia is controlled by a Committee of "The General Council of Medical Education and Registration of the United Kingdom." At the last revision of 1885 the Pharmacopœia Committee consisted of eight members, all in the interest of the medical profession, and the Committee employed Professors Redwood, Bentley and Attfield as Editors of the Pharmacopœia. In December last this Committee reported to the Council that 20,000 copies of the Pharmacopœia of 1885 had been printed, of which only 559 remained, and recommended the printing of 3,000 additional copies. The Committee also recommended that an addendum to the Pharmacopœia of 1885 be prepared by Dr. Attfield, under the direction of the Chairman of the Committee and another member, with the understanding that no new remedies are to be introduced into it except such as have met with general approval. This recommendation was agreed to by the Council, and it is understood that the work is now in progress. This is the way in which the B. P. of 1867 was revised in 1874. There was a new B. P. in 1885, now to have an addendum in 1890.

Through this ultra-conservative policy the British medical profession, by authority of the Government, has jealously guarded that Pharmacopœia from any direct influence of British pharmacy, while indirectly availing itself of the highest pharmaceutical ability by employing some of the best men to do the detail work and calling them editors. That the pharmaceutical interest of Great Britain is justly entitled to a recognized or official share in their Pharmacopœia for the best interests of the Pharmacopœia itself, can hardly be doubted; and yet it cannot be denied that the Pharmacopœia as it stands is of excellent quality, and is, as a standard, more closely followed and more generally used in British medical practice than any national Pharmacopœia.

The Convention for the revision of the U. S. Pharmacopœia of 1880 adopted the following resolutions for calling the Convention of 1890:

Resolved, That the President of this Convention shall, on or about the first day of May, 1889, issue a notice requesting the several incorporated Medical Societies, the incorporated Medical Colleges, the incorporated Colleges of Pharmacy and incorporated Pharmaceutical Societies throughout the United States, and the American Medical Association and the American Pharmaceutical Association, to elect a number of delegates, not exceeding three, and the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Surgeon-General of the Marine Hospital Service, to appoint, each, not exceeding three medical officers, to attend a General Convention for the Revision of the Pharmacopœia of the United States, to be held in Washington, D. C., on the first Wednesday of May, 1890.

Resolved, That the several bodies, as well as the Medical Departments of the Army, Navy and Marine Hospital Service, thus addressed, shall also be requested by the

President to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors, through their delegates, to the Committee of Revision, at least three months before the meeting of the Convention.

Resolved, That the several medical and pharmaceutical bodies shall be further requested to transmit to the President of this Convention the names and residences of their respective delegates, as soon as they shall have been appointed, a list of whom shall be published, under his authority, for the information of the medical public, in the newspapers and medical journals in the month of March, 1889.

Resolved, That in the event of the death, resignation or inability of the President of the Convention to act, these duties shall devolve, successively, in the following order of precedence: Upon the Vice-Presidents, the Secretary, the Assistant Secretary, and the Chairman of the Committee of Revision and Publication of the Pharmacopœia.

This call was published by the President of 1880 in almost, if not quite, all the medical and pharmaceutical journals of the United States, and seems to have awakened much more attention in the pharmaceutical than in the medical bodies to whom it is addressed.

It should be noticed that here, for the first time, the American Medical Association and the American Pharmaceutical Association are requested to elect delegates; and also, for the first time, the three medical departments of the general government are officially requested to appoint delegates. Again, it should be noticed that the several bodies addressed, including the Army, Navy and Marine-Hospital Service, are requested to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors to the Convention of 1890, through their delegates, and as thus provided for the Convention will meet in Washington on May 7.

These Conventions have in the past decided upon the general principles which were to control the revision, and then have appointed Committees of Revision to carry out these principles and do the resulting work in detail; and in view of the very great importance of these Conventions and their Committees of final revision, a more general knowledge of what is to be done by them may be useful.

Each Convention has been organized under the officers and by the rules of the one preceding it, a Committee on Credentials appointed, and when the authorized delegates have been admitted a Nominating Committee is selected by the several delegations, one member from each delegation, including those of the Army, Navy and Marine Hospital Service. This Committee nominates permanent officers of the Convention for the decennial period, and when they are elected the minutes of the last Convention are presented. Next, the report of the Secretary of the Committee of Revision and Publication of the last Pharmacopœia is presented. Next, the preliminary revisions sent in by the different bodies, and any other written communications and contributions, are called for to be referred to the new Committee of Revision and Publication.

The Nominating Committee is then instructed to nominate a new Committee of Revision and Publication, the size of such Committee being decided by the Convention. The last Committee was twenty-five in number.

The last Nominating Committee was also instructed to report a plan for revising and publishing the Pharmacopœia and to make provision for the revision of the Pharmacopœia in the future.

Then the powers and duties of the Committee of Revision were defined and the Committee duly authorized, and this done, the general principles to be followed by the Committee in the new revision were discussed, and either adopted or rejected. This is really the most important part of the work of the Convention, as will be seen by a brief review of the headings as they appear in the Proceedings of the Convention of 1880. First, after due discussion, it was decided that all official titles should be given in both Latin and English, but that the text be in English. Then it was decided that the entire Pharmacopœia present an alphabetical order of titles, classes and titles under classes; that synonyms in common use be given; and that at the end of each article the names of all the preparations into which it entered should be given. Upon these points the experience of ten years has been so favorable that it is hardly likely they will be disturbed or be subjected to much adverse criticism.

The directions for the description of crude drugs seem also to have been sufficient and satisfactory in the main, but in a few instances they do not seem to have been fully carried out by the Committee. This point may lead to discussion in the Committee, but probably not in the Convention.

The directions for the description of chemicals have of late excited much important discussion. It is directed that Opium and Cinchona shall have detailed processes of assay for the alkaloids, and that the minimum percentage of total alkaloids required be given under Cinchona, and the minimum and maximum of morphine in Opium be prescribed. No fault has been found with these directions, but it has often been claimed with much force, that now processes of assay should be directed for all the important crude drugs, even including those which have no definite, separable, active principles. This claim seems to be an outgrowth of experience obtained by the leading step taken in regard to Cinchona and Opium, but this is certainly not the case, for no one who has had much experience with Cinchona and Opium assays can have escaped the difficulties and uncertainties of these. The assaying of crude drugs for their active principles seems an easy matter to those who only read and write upon the subject. But those who attempt to practice the processes

soon get a very different impression, for there is really nothing more precarious and uncertain than these assays in general hands with but a small experience in such work. Assay processes might perhaps be wisely directed for a few additional drugs such as Aconite, Belladonna, Conium, Hyoscyamus, Ipecacuanha, Jalap, Nux Vomica, Scammony and Veratrum Viride.

Pharmacopœial processes of assay will be successful or unsuccessful in proportion to their character. If they aim at a high degree of accuracy and precision they must, necessarily, be elaborate and complex to a degree that places them beyond the reach of general pharmaceutical ability. But if they aim at only the very moderate degree of accuracy, such as satisfies the careful manufacturer in the selection of materials, rough processes of approximate assay may be found that are sufficiently easy of application to be successfully applied to pharmaceutical ability and usage through the authority of the Pharmacopœia. While most of these rough and ready processes are secreted in the hands of manufacturers, yet enough of them are published to give the Pharmacopœia opportunities of selection in these, and in the trials for selection similar processes for all would be naturally reached. Including Cinchona and Opium eleven drugs have been named which might have processes of assay given in the Pharmacopœia, and if high degrees of accuracy be not aimed at, a moderate amount of work in the selection of proper menstrua would enable the Pharmacopœia to apply the shaking out process to all these articles with results sufficiently close for the present scope of the Pharmacopœia, and sufficient to prevent the Pharmacopœia from depending upon either experts, manufacturers, or commentaries. For example, a simple and easy process for Opium assay, which in hands of ordinarily educated pharmaceutical skill and ability would have a maximum range of probable error of not more than a half of 1 per cent. above or below the truth, might be better adapted to the pharmacopœial usage of the present time, than a critically accurate chemical process with a range of error of a tenth of a per cent.; first, because no two samples of the same lot of Opium, whether moist or in powder, would come within this small range of error: and next, because such a process would require a degree of expert knowledge and skill rarely found in pharmaceutical practice.

Another important consideration not to be overlooked is, that with the exception of Cinchona, Jalap, Opium and Scammony, the drugs named can always be bought by pharmacopœial description and tests, of such quality as to yield preparations of practically uniform therapeutic value. The claim frequently heard that all pharmaceutical preparations from crude drugs should be made or adjusted by assay is so plausible and attractive, as to form a most fertile basis for specious advertising by manufacturers of these preparations, and if the Pharmacopœia could be committed to this or any similar doctrine it would put much money into the pockets of large manufacturers, and just to that extent would divert practical pharmacy from its legitimate channels and proper responsibilities. In the first place, the claim is untrue and unfair, because a very large proportion of important drugs have no separable active principle that can be determined by assay, and therefore their quality cannot be determined by assay, nor can their preparations be adjusted by assay. Out of some ninety officinal drugs in all, there are about thirty-four of the more important ones, which may be fairly represented by Ergot, Rhubarb, Senna, Wild Cherry, Dandelion, Columbo, Gentian, Butternut, Pareira, Cotton Root, Cimicifuga, Buckthorn, Leptandra, Sarsaparilla, Spigelia and Stillingia, which could not be adjusted by any ordinary processes of assay, and which do not need it if they could, because care in buying them by pharmacopœial description and tests, rather than by price, will always easily obtain a uniform good quality, at moderate cost. Again, while a fair degree of accuracy and uniformity in the strength of galenical medicines is most desirable, any strain after a degree of accuracy that is not necessary, nor available if attained, is hurtful by whatever is sacrificed to attain it. In the therapeutic uses of medicines, doses are anything but definite or accurate in quantity. Of the same medicines different individuals require different doses to yield the same effect. And even the same individual requires different quantities at different times and under differing conditions, and the real dose is always that variable quantity that yields the peculiar effect of the agent. How then can the physician avail himself of any degree of critical accuracy beyond that practical uniformity of strength and quality upon which his experience is based, or of any degree of critical accuracy which is beyond the limit of accuracy determined for him by variable individual susceptibility? All that is true and sound on this point is that a practical degree of uniformity is all that can be useful, and that this can be attained by the Pharmacopœia without any such system of elaborate assaying as would tend to throw this important interest of the Pharmacopœia into the hands of experts, or would-be experts. The line of wise action seems not difficult to draw here. If the descriptions and tests of the Pharmacopœia can be improved without carrying them beyond the reach of educated pharmaceutical or medical skill in application, this should be done, applying assay processes only to such drugs as have easily separable active principles. Then, a very few preparations, such as those of Opium, Nux Vomica, and perhaps Cinchona, might wisely have their strength adjusted by these assays. There has never been a time within the forty years' ex-

perience of the writer, when officinal drugs were more accessible to those who would take the trouble to look for them, and be willing to pay for them; and to those who will not take the proper pains, nor pay adequate prices, the Pharmacopœia would continue to appeal in vain, even by the most elaborate system of assays and adjustments, if such a system was practicable.

The Convention of 1880 next specified the chemical formulæ and chemical notation that were to be used throughout, and also directed special chemical processes to be given in detail for officinal chemicals, with the result that these have been, in the main, fairly successful. Some of the processes have not been given in sufficient detail, but such being now known, they will doubtless be amended.

A very important direction, given by the Convention of 1880, after much careful discussion and deliberation, was that "All measures of capacity shall be abandoned and quantities shall be expressed in *parts by weight;* except that in the case of Fluid Extracts, the Committee of Revision and Publication shall have authority to adopt such process or processes as shall seem to it best."

This change has caused some popular dissatisfaction and adverse criticism, and it is not unlikely that in the approaching Convention there will be an effort made to get back to the old weights and measures on the one hand, or to metric weights and measures on the other. The present plan having now been in use for about eight years, there should have accumulated experience enough to enable it to be dispassionately discussed, and if it be so discussed it will doubtless be continued in force. The chief objection to the plan seems to be the weighing of liquids which had hitherto been measured. The writer has looked in vain for any argument against the weighing of liquids. The reason why the practice was changed was that the measuring of liquids was inaccurate beyond what is easily controllable, and beyond what is now admissible in the progress of medicine and pharmacy. No reasonable person doubts this, and no attempt to fairly controvert it has been noticed in any other way than by the mere clamor that weighing liquids is too troublesome, and therefore the less troublesome measuring must be reinstated. No one has ventured to say that the measures accessible in general practice are as fairly accurate or uniform as the weights are; nor that, if the measures were accurate, measuring by them would be as accurate, or anywhere near as accurate as weighing. Every one knows that the adjusting of the level of the liquids to the mark in measuring is never twice the same even in the same hands, and that with double the amount of care and pains in measuring, the weighing is the more accurate. Every one knows, too, that, as measuring must of necessity be continued in use for dispensing and dosing, and is there applied only to dilute liquids, when small errors may be tolerated,—this circumstance limits the weighing of liquids to the actual practice of the Pharmacopœia; and the number of times when, in compounding from the text of the Pharmacopœia, liquids require to be weighed, is small though very important. Those who object to the weighing of liquids simply because it is troublesome and inconvenient, while granting the superior precision of the practice, cannot certainly be of the same class which demands to have preparations adjusted by assay for the sake of precision.

Objections have also been raised against the use of parts by weight, and it is not unlikely that efforts will be made in the Convention to return to arbitrary weights. This, again, would be to lose all the ground gained by eight years' experience in this step of modern progress. The chief reasons for adopting this simple and precise method of expressing relative quantities were, first, that it avoided the two tables of weights and measures which had led to confusion for so many years, and allowed the operator to use any system which he might have at hand, including the metric system; and second, that it did not commit the Pharmacopœia to any definite quantity for its preparations, but allowed the operator to make the quantities that were best adapted to his wants at the time. That is, he might construe the parts by weight to be any system of pounds or ounces he might have, or, he could make each part a half or a quarter ounce, or ten grains or one grain, or a gram, or kilogram, and the result would be always the same. Besides, it was a step towards the metric system, the adoption of which, though distant, must now be considered very sure. To return to the old apothecaries' weights and measures, or to adopt the avoirdupois, would be to lose all that has been gained, and throw the labor on some future Convention of starting anew from the same old point of ten years ago. The reasons for making this change to parts by weight have never been successfully controverted. No one has ever shown that the change did not accomplish the objects intended by it, nor has any one shown that the change involved disadvantages which, either in their nature or degree, overbalanced the advantages. The summing up of all that has been said against the method seems to have been that it was not generally understood sufficiently well to be generally adopted, while it replaced a method that was well understood and successfully practiced, and therefore it was inconvenient and objectionable. Thus stated, these objections seem simply puerile, especially if looked at in connection with the examination papers of the various schools of the country year after year. That any of the students who passed any of these examinations for the last ten years should not know

enough of common elementary arithmetic, to easily substitute parts by weight for any arbitrary system of weights and measures with the tables before them, is incomprehensible. Then it must not be forgotten that the former revision adopted the apothecaries' or 480 grain ounce, and the 456 grain fluidounce, while it was shown that ignorance, stimulated by pecuniary profit, led to the not uncommon use of the 437½ grain ounce and fluidounce, and to this day some of the largest manufacturers in the county graduate their measures by the 437½ grains of distilled water to the fluidounce. Should there be any thought in the Convention of going back to an arbitrary system of weights and measures the avoirdupois table should be adopted, as in the British Pharmacopœia, where the small ounce and fluidounce are used exclusively. Then, in such a change as this it should not be overlooked that most troublesome calculations and equally troublesome fractions would be required to keep the officinal preparations near their present strength.

In concluding these remarks, it may not be useless to offer the force of one single example. It is highly probable that this writer uses the Pharmacopœia in actual practice as much as any other individual in this country, and he has found the weighing of liquids, and the use of parts by weight, not only more accurate, but also much more convenient than the older usage, and he is therefore a strong advocate of the continuance of the plan in the approaching revision.

The last Convention gave wise directions that such preparations as tinctures, wines, etc., in which slight variations are not important in case of a change for uniformity's sake, might be reduced to uniform percentage strength, but that the more active preparations of this class should remain, as nearly as possible, unchanged. The work of the Committee of Revision under these directions has been satisfactory so far as is known.

The direction that temperatures should be expressed in both centigrade and Fahrenheit degrees was very wise, and the practice has been very useful.

The direction that all doses shall be omitted from the Pharmacopœia was but a continuation of the usage in all previous revisions. In every revision there have some efforts been made to have maximum and minimum doses given, as in some other pharmacopœias. This has been advocated, not only as a guide to physicians in the use of both old and new medicines, but also as an important guide to pharmacists in checking mistakes in prescriptions, and in exercising caution against excessive doses. It has also been advocated as tending to increase the usefulness and authority of the Pharmacopœia in courts of law. But the objections which have always prevailed in overbalancing these admitted advantages were, first, that, in any accurate sense, there are no maximum and minimum doses that are not so wide apart as to lose all practical value, and be in danger of misleading. It is generally known that each individual has a different susceptibility to potent agents, and therefore requires a different dose. Next, that different diseases and disorders require different doses; and different conditions of the same disease also require different doses. And, finally, that different authorities differ so much among themselves that from them it would be impossible to adopt a standard range of doses that would be short enough to be of much practical value, while the Pharmacopœia, aiming to be a standard, could not be a standard in this. In short, the only doses that could be wisely stated would be those proper to begin with, imposing on physicians their duty of watching the effects of their agents and increasing their doses until they reach the desired effects or the physiological effects. Undoubtedly physicians are often so trammelled by stated doses as to miss the uses and effects of their agents, and if this be so, and if the above considerations be admitted, then all that the Pharmacopœia could wisely do would be to give proper, safe doses to begin with in the application of its standard agents. This much would not commit the Pharmacopœia to anything beyond its legitimate scope.

The Convention of 1880 directed a large number of useful tables to be appended to the Pharmacopœia specifying those most desirable, and authorizing the Committee of Revision to add any other tables that might be deemed expedient. The Committee did add a number of very important tables selected with care from various authorities. But three of those directed by the Convention were omitted. One of them, namely, a weight and volume table to facilitate the use of parts by weight and by the metric system, is very important, and would have been very useful. The want of such a table has been supplied by the commentaries on the Pharmacopœia, but just to the extent that this is necessary or useful do the commentaries take the place of the Pharmacopœia. Such a table involves a large amount of careful labor in both construction, and detail work, but it seems to be practicable inasmuch as the commentaries have supplied most of the elements of such a table in detail.

Another table ordered by the Convention and not supplied by the Committee was one of specific gravities of officiual liquids for each degree of temperature between 10° and 25° C. (50° and 77° F.) This would be a very useful table indeed, and one that, so far as this writer knows, is not to be found elsewhere, but it is one that would require much careful labor to make. Specific gravity is perhaps the most important of all the tests of quality of liquids, as it is the most generally applicable, and the main difficulty in the way of its application has always been the

adjusting of the liquids to a single given temperature. Therefore, if a table was carefully constructed giving the equivalent figures for each degree, or each five degrees of ordinary room temperature, specific gravities could be so easily, so quickly and so accurately taken as to very greatly increase the application of this test. Such a table might be constructed in either of three ways. The standard volume of water for comparison might remain constant at 4° C.=39.2° F., or might remain constant at 15.6° C.=60° F., or it might vary with the room temperature at the time of weighing. That is, the volume of water for comparison might always be at the same temperature as the liquid compared. This latter is the true essential idea or principle of specific gravity, but its general use would involve the necessity of either a special bottle with a graduated tubular stopper graduated for each degree, or five degrees of water expansion,—or a troublesome arithmetical calculation,—both very objectionable when the aim is easy, rapid and accurate practice. Apparent specific gravity by either one or both of the fixed standards would be preferable. Throughout continental Europe the standard volume most used is water at 4° C., and this is becoming common in Great Britain and in this country also, but for a true specific gravity by this standard, the liquid compared must be reduced in temperature to the standard 4° C. This is always troublesome, often difficult, and sometimes impracticable, and therefore apparent specific gravities by this standard are common. That is, the standard volume at 4° C. is used, and the temperature at which the same volume of compared liquid is weighed, is given. As a general rule, throughout Great Britain and this country the standard volume used is water at 60° F=15.6° C., but the last Committee of Revision very unwisely, as the writer thinks, adopted a new standard of temperature of 59° F.=15° C., so that now the officinal specific gravities cannot be referred for comparison to any known tables in previous use with perhaps a single exception. If a table had been constructed as directed by the Convention this would have been the less objectionable, because then the new figures could have been easily compared with those of previous usage, and the equivalents be known. The most convenient usage for a pharmacopœial table at the present time would doubtless be to adopt 15.6° C.=60° F. as the standard volume and take this as the basis of a table of apparent specific gravities. That is, let the standard temperatures remain constant, and compare all the other temperatures with this. This method would be almost necessary in this country as almost all the specific gravity bottles in pharmaceutical use here are adjusted with more or less accuracy to 60° F. Then all that would be needed would be to fill and weigh the bottles at any room temperature at which the liquid might be. Then ascertain this temperature and by it refer to the table where, coupled with the apparent specific gravity at this temperature, would be found the true specific gravity at the standard temperature. In constructing such a table the actual specific gravities should not be taken closer together than for each 5° C., because the interval could be more accurately filled in by calculation than by observation. If such a table be not supplied in the next revision there should at least be given, in all cases, an apparent or true specific gravity at 25° C.=77° F., as is now done in the instances of Ether and Alcohol.

A third table ordered by the Convention and not supplied by the Committee, was one comparing the strength of powerful galenical preparations of foreign pharmacopœias used in this country with that of the corresponding preparations of our own. Such a table would be useful, and occasionally important. But such comparisons are of late so infrequently needed and so easily reached, when needed, by a little calculation, that the table has probably not been missed.

Knowing, as this writer does, the enormous labor put upon the last Committee of Revision by the Convention, and the great and numerous difficulties under which this work had to be done, it is not to be wondered at that some of the less important matters were left out. The next Committee will, it is hoped, be under much more favorable conditions. Thanks to the wisdom by which a high price was put upon the Pharmacopœia, there is now money enough in hand to begin the new revision and carry it forward for some time without delay. The last Committee had no money, and although the Convention authorized the employment of experts for the detail work, it did not provide any money to pay such experts, so that it was only when the work was so nearly done that the copyright could be sold that money became available, and then experts were not needed. All the work had to be allotted to the members of the Committee, and it was done by them, busy men as they were and are, without any remuneration of any kind. The Chairman of the Committee, however, had far the most laborious position, and a position that no future Convention should ever ask a Chairman to fill without liberal compensation for his ability, time and work. These Conventions must have Chairmen of exceptional ability and indefatigable industry, who can give a large portion of their time to the work, and such a Chairman who has served once has, to the Convention, double the value of any new man whose peculiar and rare qualifications for the work are unknown and untried.

There has been a good deal said in the journals against the high price of the present Pharmacopœia and in favor of a book of low cost, and it

seems to have escaped the attention of the writers, that this was the only way in which money could have been raised then to defray the absolute outlay necessary for a proper revision of a national Pharmacopœia, even when all the individual labor of the revision was volunteered without remuneration by men who could ill afford it; and the profit upon the sale of the Pharmacopœia must be, in the future, the only means of paying for the labor put upon it. Besides, it must be borne well in mind that the amount and quality of the labor put upon it will be sure to govern the demand for it, and that the time has gone by when the kind and quality of labor that will make a salable book can be had without being paid for. There are several private interests which would be willing to take the work and pay all expenses upon it, and then give the book away, if they might have its authority and prestige to use for business advertising purposes, especially if it could be made to lean just a little in the direction of any one of the single special interests; but the number of those who would like to see the Pharmacopœia paid for either wholly or in part, in any such way, must be very few. The price realized for the Pharmacopœia over and above its actual money cost, is in reality the tax which is paid by those who use it, to pay the expenses of the next succeeding revision, and those who demand that it should be sold at or near cost, simply ask that the Convention and its Committee pay their own expenses, besides contributing the time and work. Of course a line must be drawn somewhere, and the experience of the last revision will be very useful in determining the price of the next; but it must always be borne in mind that each revision is more expensive than the last, and that in no revision yet has the expensive part of the work been paid for; and, further, that in all succeeding revisions it must be paid for, if better work is to be had. The only way in which a really good Pharmacopœia, fully up to its time in the quality and quantity of the work put upon it, can be supplied at a low price, is for the Convention to pay the expenses by a tax upon the bodies whose delegates form the Convention. In other nations the governments pay all the expenses, including the expert skill and labor; yet in some of them—Great Britain and France, for example—the book is sold at a high cost for those nations. It is quite probable that now that a small surplus will be handed over toward the beginning of the next revision, and now that the copyright is worth more than ever before, the approaching revision may be kept as good a book and yet be sold at a lower price, especially if the Committee should resolve not to sell the copyright, but instead, to publish the book themselves in case they cannot get a better price for it than heretofore.

By far the most important work of the Convention is the selection of its Committee of Revision and Publication. The Convention first decides of how many this Committee shall consist, and then how it shall be nominated. The last Convention directed that it should consist of 25 members, and be nominated by the Nominating Committee; that is, the Committee raised to nominate permanent officers for the Convention. This Nominating Committee consisted of 38 members, or one from each body represented by delegates present, and one each from the Army, Navy and Marine Hospital Service, the several delegations being called upon to name their members. In regard to these two very important Committees in the approaching Convention the following points are offered for consideration in advance, and for whatever they may be worth:

The Convention of 1880 consisted of about 116 accredited delegates; or, if duplicates and alternates be omitted, 104—69 medical and 35 pharmaceutical. About 80 of these were present, and therefore, the Nominating Committee of 38 was nearly half the Convention. Such a Committee, though very fairly representative, is too large for the best committee work, and the next Committee, if made up in the same way, will probably be still larger.

In the selection of permanent officers for the Convention this Committee might wisely discuss the advantages of having the offices of President of the Convention and Chairman of the Committee of Revision and Publication devolve upon one man, and of attaching a liberal salary to this office of ten years' duration of labor.

The Committee of Revision and Publication must of course select its own plan of work, but it would be entirely competent for the Convention, if it so pleased, to direct that every process and every test, including specific gravities, should be actually tried by expert hands before being accepted for publication; that is, that authorities on these points should not be accepted untried.

Again, it would be competent for the Convention if it chose to do so, now that there will be a moderate amount of money to start on, with every prospect of a sufficiency in the future, to direct that under the guidance and control of the Chairman the detail work should be done by well selected and well paid experts, and be submitted to subcommittees for comment and confirmation, thus reversing the order of work in the last revision, where want of funds rendered such a plan as this impracticable. By some such plan as this every process and every test would have a double security for its accuracy, and would be, in this, a great improvement upon former revisions. Besides, it would very much lighten and simplify the individual labors of the committeemen, and give them more time for the consideration of admissions, rejections and other changes, which require much reading up and careful deliberation.

The recent introduction to the materia medica of synthetic chemical substances, which are either patented or trade-marked, seems to indicate that although the substances are already numerous, they are still to become more numerous and more complex and confusing to the ordinary physician, and that no work of the Pharmacopœia is more important than to protect such physicians against the interested representations of trade in these very lucrative articles, if any of them should be admitted. The question as to their admission and as to how many of them is a most important one for the Committee, and one not to be lightly nor hastily settled. One difficulty in regard to these substances is comparatively new. Their chemical names are long and impracticable. Rational names are not easily, while empirical names are very easily found, and these are trade-marked or patented, and the tendency now is to trade-mark these, rather than to patent them, because patents expire in a definite time, but trade-marks continue to protect indefinitely.

In conclusion, the writer begs to lay all possible emphasis on the grave importance of this work to the medical profession, and to urge the need of sending the best and most conservative men to take active part in this Convention, remembering that inactive delegates, though in a numerical majority, carry little weight in Conventions of active men full of the spirit of mercantile enterprise.

ORIGINAL ARTICLES.

PHYSICAL EDUCATION IN CHILDREN.

Read in the Section of the Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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It is my object in this paper only to call attention to the value of physical education in children for the prevention and cure of disease. But before this is done, it is best to consider briefly the physical condition of children.

Bones.—The bones of children are imperfectly formed. Many are semi-cartilaginous, while others consist of different segments held together by intervening cartilage. They are elastic, and full of blood and fat. The periosteum is thicker than in adults, and richly supplied with vessels. The connective tissue of young bone is tender, and hence has not as firm a union with tendons and ligaments as is found in adults. The cartilaginous union of the shafts of bones with their epiphyses makes violent exercise dangerous because it is likely to cause separation.

Muscles.—The muscles of children are in less of a developmental state than bone, though the muscle elements are not as firmly bound together as in adult bodies. Their nutritive supply is very liberal and they are generally surrounded by a liberal layer of fat. They contain a larger proportion of water than those of adults, and therefore are not so firm and hard as the latter.

Blood-vessels.—These are all relatively large in children and liberally supplied to nearly all parts of the body. They are more susceptible to impressions at this time of life than in later years. I mean that it is easier to develop them in childhood than in adult life, for they respond more readily to increased pressure and have a relatively better nutritive supply. Oxygenation of children is also better performed than in adults because the freshly ærated blood has a shorter distance to travel from the heart to the remotest parts of the body.

Nervous System.—While the nervous system is undergoing considerable development in children, it presents quicker reflexes than in adults, probably largely due to the shortness of the peripheral nerves, thus consuming less time in the transmission of the afferent and efferent impulses. But a child's nervous centres are more sensitive to stimuli and irritations, as is shown in their common reflex convulsions and febriculæ almost always readily controlled by the administration of nervous sedatives, notably the bromides. Shortness of limb, entirely aside from the rapid transmission of nervous impulses, is very conducive to the rapidity of movements so noticeable in children.

The Viscera.—The large liver and the relatively small lungs are prominent anatomical features in the child. The stomach and intestines are proportionately large, causing a decided abdominal bulging. The viscera of a child have a softness and vascularity in marked contrast to the same organs in the adult. All in all, children are a much more delicate organisms and require a comparatively greater amount of care.

Digestion.—The inbibition, digestion, and absorption of food in the child consists of a most interesting and important series of phenomena without a thorough understanding and appreciation of which the proper physical education of children at any time is impossible. Too much stress cannot be laid upon this point, and it must always be remembered that no fixed dietary will do for any large number of children.

Growth and Development.—The child is undergoing constant changes of growth and development, all its powers being more active generally than those of adults. The association of its organs are new and more apt to be impressed by external influences than in an older organism. What would produce a moderate effect upon an older organism might be powerful in its influence upon a younger one. Adult organisms undergo but little further development while in children many changes have yet to occur. It

follows that more care must be exercised in the direction of children's exercise than that of grown men and women.

At first sight it does not appear that exercise can have much effect upon the growth of bone, but the facts of experience teach that it is so. The explanation is simple. Young bone is but a connective tissue framework, filled with bone cells, or osteoblasts, and cartilage, and this blends directly with the surrounding periosteum, thus forming a continuous, direct, and intimate fibrous connection of the periosteum and the entire interior of the bone. In the same way can muscles be described as consisting of a connective tissue framework supporting muscle cells and their vessels and nerves. This all pervading connective tissue begins to predominate over the muscle element as it nears the end of the muscle to become modified into the tendon. This tendon loses itself in the periosteum and bone to which it is attached in very much the same way as its other end does in the muscle. Thus a muscle tendon is inserted into the very heart of the bone and not into its superficial layer, as is so commonly and erroneously supposed, and unfortunately too often taught.

From the intimate relations that I have indicated as existing between the connective tissue of bone and muscle and the intervening tendinous structures, it follows that forcible or sustained muscular contractions that pull upon a bone, act upon its deeper parts as well as upon its surface. It also follows that the depth at which the strain is felt in any bone depends upon the severity and duration of the force exerted.

It is a well known law in physiology that increased functional activity of a part causes an increased supply of blood. Suppose now that the child is doing considerable exercise, and we have at once an increased blood supply in its acting muscles and strained bone. If this is kept up a long enough time the increased blood current leads to a higher nutrition of the part—growth—and should the bone be in the developmental state, it will modify its development. As a proof of this effect of exercise upon bone, I will only call attention to the readiness with which anatomists usually distinguish the bones of a male from those of a female because of their larger size and the more decided markings of their ridges for muscular attachment. "This must have been a powerful man," is an expression often enough heard coming from teachers when looking over a skeleton with prominent ridges and tuberosities. In my paper on "Base Ball Pitcher's Arm" I had the opportunity to first call attention to the fact that bone growth in the adult is caused by excessive exercise.[1]

My sole object in being so explicit upon the effect of exercise upon bone is to show that it is a potential agent for doing much good or harm according to its proper or improper application. With this example well in mind, it is hardly necessary to demonstrate the equally potential power of exercise upon all the other parts of the body, when it has been conclusively proven to have so decided an effect upon the nutrition and growth of as hard and unyielding and relatively passive a substance as bone. Now what are the general effects of moderate and violent exercise in health?

Moderate Exercise in Health.—When judiciously taken, moderate exercise, in ordinary health, increases the nutrition of the body by increasing the heart's action, expanding the blood-vessels, increasing the secretions and excretions, and subsequently inducing tranquil and refreshing sleep. Besides this, it increases the vigor of the respirations, and thus the oxygenation of the blood. The body is pervaded by a healthy glow that remains for several hours, and is followed by a feeling of added strength without any subsequent reaction.

Violent Exercise in Health.—By violent exercise I mean any physical work that is felt as a decided task. All such is sure to induce local congestion at the seat of strain, and if persisted in will cause inflammation and hypertrophy. None of the organs subjected to these strains escape this inevitable result. In the young it may even cause epiphyseal separations, tearing of the periosteum, and rupture of muscle. It follows from this that moderate exercise is better adapted for general use among children than the more active and dangerous variety. For some purposes, though, the latter is more desirable, but it must be used with caution.

Therapy of the Exercise of Children.—Under this head I wish simply to mention some of the circumstances under which it is possible to benefit children either by exercise instead of, or in conjunction with, other means. Of these conditions some of the most important and prominent are *spinal curvatures* not dependent upon osseous disease. Several plans for the relief of this class of cases are now in vogue, but all seem to me more or less seriously defective. It is very generally, and I believe justly, supposed that these curvatures result from muscular weakness. Yet one plan is to treat them by a fixed plaster jacket, or by metallic braces. The defect of this treatment is that, while it may hold the column straight, it does not strengthen the weak muscles which should be able to hold the column in its proper position. Another method is to prescribe certain exercises that will develop certain muscles until they are strong enough to obliterate the curves by their contraction. This plan is also defective in that it only develops certain muscles, while others equally as important are overlooked. Sufficient success may, and often does, result

[1] Medical News, July 16, 1887.

from such treatment in so far as it pleases the patient by evident improvement. But the physician's work does not stop at this point. His business is to permanently restore abnormal conditions to a normal state. Special development of certain muscles does not do this, for by following such a plan one simply replaces one deformity by another. No treatment of deformities by physical exercise is devoid of serious error that does not affect the symmetrical development of the body.

For instance, in a dextral dorsal curvature due to muscular feebleness, the fashionable physical culture treatment now in vogue would compel the daily exercising of the muscles of the left side of the chest for the purpose of pulling out the ribs and reducing the concavity of the spine of that side. So far the utility and correctness of this treatment cannot be assailed. But it practically stops at this point, or with a few additional exercises, causing a bending of the trunk so as to antagonize the objectionable curve. The method is defective by omission. Of what avail is it to have a straight spinal column with muscles on one side much stronger than those on the other? A muscular deformity succeeds one that was bony. This is not all, for in course of time the stronger side predominates and the curve returns, but it is the reverse of what it was in the first instance. What is absolutely requisite to a permanent cure is general exercise for both sides, and a few supplementary exercises to help reduce the deformity without unnecessary delay. These may be of the calisthenic variety, or by means of dumb-bells, clubs, or pulley-weights. I prefer the last at all times when convenient. A suitable machine can be obtained for the moderate sum of ten dollars. I consider Reach's "O.K." machine by all odds the most useful in the market, and it is the cheapest, especially when one takes into consideration the numerous exercises for which it can be adjusted.

A lady who has just left for her home was under my care for a week, receiving instructions in calisthenic and pulley-weight exercises for two purposes: One series, to antagonize a dorso-lumbar curve, and the other to equally strengthen the muscles of her back and thus enable her to hold herself as erect as was intended by nature. She has a machine at home and will continue her work until this is no longer needed. In her case the cure will be permanent. Had she received instructions in only those exercises which antagonized her curves, she would have made a temporary recovery only to lapse into a reversed curvature.

Club Foot due to muscular weakness, as in cases caused by anterior poliomyelitis, are best treated with special exercises. One plan is to brace such a club foot in leather and steel, thus forcing the foot into proper position without any direct effort to regenerate the lost muscle power. Everything is left to time and the curative powers of nature. But this is neither scientific nor for what the physician receives his pay. The muscles actually atrophy to such an extent while braces are worn that they can never recover their functions. Another method, most ingenious, less unsightly than the former, and somewhat better, though also defective, is that which uses the artificial rubber muscle. If I am not mistaken, this was introduced a decade ago, by the ingenious Dr. V. P. Gibney, of New York. But the serious objection to the rubber muscle is that it also largely destroys the functional activity of the affected muscle by doing for it all its work. The plan of treatment which I advocate in all such cases is to use the brace where it is necessary to guard against accidental dislocation. The patient should only wear it when obliged to be on the feet, especially in locomotion. The rubber muscle should be worn when braces are not necessary, and when for æsthetic reasons it is desired to hide the deformity, but at all other times the foot should be permitted to fall into a natural position while exercises are practiced to develop the affected muscles. They should also be faradized while the cord should be moderately galvanised. I of course only refer to those cases in which the motive power has not been lost.

It has quite frequently been said that a child is a small savage undergoing civilization. It is irregular in its habits and tends to gormandize, as well as eat and drink without regard to the wholesomeness of what is within its reach. Regular physical exercise teaches it system, care, and discipline. Many children have a defective digestion due to many causes, common among which are defective circulation, defective nervous force, and defective muscle force in the stomach and belly walls. These are all remedied by proper exercise. Many forms of indigestion we all know yield kindly to suitable exercise, and in no class of individuals is this more so than in children.

Some children are morose, some have mental torpor, some are lazy, and so I could go through a list of ailments referable to the tone of the central nervous system. Now a fact that is but little appreciated is that, physical exercise is a nervous stimulant and tonic of the highest value, in fact, I believe it to have no par, and this conviction is the result of a large unbroken series of practical clinical observations. I know of no better demonstration of the effect of exercise in sharpening the wits than that given by Dr. Hamilton D. Wey in his reported experiments with some dullard criminals in the New York State Reformatory, at Elmira. It has the same beneficial effects in improving the disposition, for I have seen many disagreeable children become cheerful and good natured after becoming actively interested in a

course of physical education. The exceptions are temporary and due to conceit growing out of distinctions earned by superior accomplishments in contests. As a rule this condition does not last.

Systematic physical exercise is impossible without personal cleanliness. Children who are brought up familiar with the gymnasium and track are clean and regular in their habits. Together with a weak body there is nearly always associated a high degree of backwardness due to false modesty, and also considerable lack of confidence. Now these are almost invariably lost after one or two years of gymnasium and out door athletic work. That this is a valuable change for those who in later years must fight the world's great battle cannot be gainsaid.

As physicians we all know the objections to the customary drinking of intoxicants and the use of tobacco. Their employment conflicts most positively with good athletic work of any kind. An early physical training of children compels them, or at least urges them, to dispense with intoxicating drinks or any form of tobacco. This alone would be reason enough to justify a demand for the early physical training of our children if there were no others. No athlete can get along without fresh and wholesome food. Therefore greater care in the acquirement of both of them would inevitably result from proper physical exercise.

The Physical Education Society of Pennsylvania has so far directed its main efforts towards introducing into the public schools of the State a system of compulsory physical education. It now exists in some parts of the country, notably in Milwaukee where the German Turners are doing so much good to the rising generation. It is confidently hoped that in less than another year Pennsylvania will be enrolled among those few States that have made a systematic attempt at the physical as well as the mental education of their children.

I can think of no better conclusion to this paper than a quotation from a former contribution of mine on this subject:

"1. The object of physical culture is to develop the material body, and with it, of necessity, the mind and morals.

"2. Like most potent agencies, it is much abused and far too little understood.

"3. It absolutely forbids smoking.

"4. It absolutely forbids the drinking of alcoholic or malt beverages.

"5. It insists upon the necessity of regularity in living, especially as regards time of sleeping, eating, exercise, and recreation.

"6. It enforces a good substantial dietary that will never be forgotten.

"7. It discountenances all kinds of vice.

"8. It is rigid in discipline without seeming so to those disciplined, and develops implicit and willing obedience to advisors.

"9. It has a marked effect upon the growth of the body and mind.

"10. It develops to a high degree the valuable qualities of hope, confidence, courage, deference, obedience where proper, independence, perseverance, ambition, temperance, and determination.

"11. It is, in short, the most valuable preparation of the young for the cares and trials of adult life, and aids young and old alike to ward off disease and mitigate its effects."

129 South Thirty-Sixth St., Philadelphia.

THE CONTROL OF EPIDEMIC DISEASES.

Read before the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY G. T. SWARTS, M.D.,
OF PROVIDENCE, R. I.

By epidemic diseases we usually consider diseases which are contagious or infectious. I wish to include within this group all other diseases which may attack an unusual number of persons within a short space of time, as trichinæ "poisoning," disease resulting from the ingestion of diseased meats and other foods, poisoning from canned goods, diarrhœal disease resulting from the ingestion of contaminated milk, tuberculosis as disseminated by man or infected milk or flesh of animals so diseased—in fact any sudden onset of a number of cases in which often the physician is at a loss to make a diagnosis, but which by eliminative investigation proves to be due to some common cause, as contamination of milk, water supply, or air. Any control which may be of practical and most valuable service in such sudden outbreaks must be prompt.

It has been customary for several years in most cities to keep a record of the deaths resulting from the zymotic diseases. Later, from interest or curiosity, or later still, from practical use, it was made compulsory that the physician should report all such cases as might come under his care to the health authorities. In many cities, from the known contagiousness of these diseases, an immediate control of the cases is made by placing the case and the family, and those immediately exposed thereto, under quarantine. This is made more or less strict, and hence more or less of a success, as the advanced knowledge of the health officer may order, or in proportion as the health officer may have been able to affect public opinion. The family is warned not to receive visitors, the house is placarded, the premises inspected for unsanitary conditions which might have been a provoking or assisting cause in the production of the disease, and remedied as soon as possible for assistance in the recovery of the patient.

But without constant supervision and having ready the agents whereby an eliminative exami-

nation can be made, much valuable time may be lost, and what with a few cases could be easily fixed upon as a cause, becomes later, by the result of man's natural desire to protect himself and from fear, a mixed question. The physician, hearing of the prevalence of a certain line of symptoms, most naturally sees an almost similar line in the next case that he meets, and reports the case as the same as the one prevailing; and yet, under no stress of an epidemic, such a line of symptoms would find its way into a natural category.

In order that a control should be kept up it is necessary that some organized authority, such as a board of health or sanitation, should be established, whose legal powers and executive ability should have wide scope and cover considerable area. Where such authority borders upon other provinces a systematic exchange of suspicious conditions of cause or of result should be kept up, that each might serve the other.

In all epidemics of a serious character the experience has been that the disease has gained a wide spread before any organized movement for its study can be made. In order to control this a few cases should suffice to give the suspicion to an authority already established. In order that such authority may be able to take advantage of such ready action, it must be equipped with an assistance which is constantly in operation, and which should include within its working staff not only a chief officer, but also a medical inspector conversant by daily practice with inspecting and collecting for information every minute detail about the condition and associations of each individual case, whether the case be a typical one, or merely a suspect. The chief officer should have for assistance a chemist, a bacteriologist and a competent veterinarian, that with as little delay as possible any suspected contamination of the ingesta of the cases may be investigated.

There can be but three ways in which an epidemic disease (omitting those of nervous contagion, as hysteria, etc.) may originate, viz: either by inhalation of contaminated air, or by ingestion of fluids or solids. If a comprehensive control can be kept upon these three things by such a corps of assistants as has been cited, the chances of spread of disease can be reduced to a minimum.

Such a chief officer should be kept informed of the state of the various water supplies of his district, knowing the sources thereof and the many points where contamination might take place. This should include not only river, pond or well supply, but should extend to a control of all mineral waters, whether local or imported, and also its condition during storage or filtration. The source of every quart of milk received in his province should be known, as also the water supply of the cattle supplying the milk, and the physical condition of each individual animal in the herd should be known.

This seems at first thought as a vast undertaking, from our not having already such a control; but this was carried out in France as soon as the convention on tuberculosis made its report. Considering that milk is so common a food, and its defects in the way of tuberculous contaminating influences from disease on the animals, producing gastric and eruptive disturbances, especially in children, its chances of contamination by dilution and lack of cleanliness in handling, it is well worth all the attention which can be given to it, if a perfect control is desired. A control of the filthy methods in use for the collection of milk would alone do much towards assisting infants and children to tide over the heated term, and assist the typhoid patient with this as his only food to a chance of recovery.

A control upon the contamination of air is attempted in most cities by destroying all refuse matter by removal of decaying animal or vegetable matter to an unfrequented place, either for burial or cremation; also by checking the influx of foul air from cesspools and drains by the introduction of a trap and tight connections of waste and drains. A constant examination of the air in suspicious localities should be kept up, especially in places of public assembly, as in schools. As illustrating the method I would recommend in epidemic control I will cite two recent epidemics within this State.

The first occurred in the town of Bristol. Over one hundred people were attacked within the space of a few weeks with symptoms which resembled typhoid fever. The town had no working force for investigation, and the State Board of Health was in a similar condition of inefficiency. The writer was requested by the Council of the town to investigate the disease prevailing. The cases had been very generally reported by the physicians in attendance. A visit was made to the premises of each case, and every influence to which they had been exposed was given attention. This included, besides the examination of the sanitary condition of the premises, the source of milk and water supplies, the occupation, whether recently away from home, the ice supply; also the different ponds and tracts where the ice was gathered, and the water shed supplying the same, the vicinity of the pumping station and the bank of the river giving the water supply for some distance up the stream, and the storage tank or, reservoir. The meteorological observations of the previous months, the subsoil and strata in and about the town were all examined. The direction of previous epidemics was also noted. By recording the results of all the examinations together, and by such a method only, can an eliminative selection of cause be found.

In addition to this a chemical examination of the water supply was made, a bacteriological ex-

amination of the water and milk supplies, and also of the stools from the patients, but no typhoid bacilli were found. Eliminative evidence showed without doubt that a particular source of milk was a factor in the production of the disease.

This source of milk being shut off the epidemic ceased. The next point to be determined was whether the cows supplying this milk were diseased or whether they were ingesting material which might influence the character of the milk, and yet prove innocuous to the animals, and if such material were present, to determine whether it was air, water or food. To determine this a bacteriological examination of the air was made, samples being taken from in and about the barn before and after sweeping of the floor, which operation was performed just before the milking time and which created much dust. Nothing of note developed in the cultures, except the organisms usually found in air, the sarcinæ and one colony of the bacillus prodigiosus. Examinations of the milk were then made, taking specimens first from the cows direct, next from the pails, then from the strainer, and from the cans, directly after being filled, after they had stood in the ice box, and later after it had been delivered in town. Neither specimen developed in the cultures anything which would answer the test of Gaffky's typhoid bacillus, but each contained numerous colonies of a bacillus which resembled the wurzel or root-like bacillus. Gafiky's. This bacillus is found commonly in stagnant water, ditch or bog water or superficial garden soil. This discovery led to a suspicion of the drinking supply of the animals, and which had already been condemned, for the animals themselves were apparently healthy except one or two of the eight had glandular enlargements under the jaw which might or might not have been tubercular deposits.

The source of water supply for the animals had already been found to be a low marshy, boggy district, the pond being formed from the accumulation of surface water, being not over 6 or 7 inches deep and stagnant. The cows were in the habit of standing and walking about in this water, making it very muddy and drinking as their needs might demand. This pond also received the drainage from the farm-yard, which had not been cleaned of cow refuse for several years.

The wurzel bacillus has been shown to have no influence upon animals, and is non-pathogenic as far as man is concerned. The query might be presented, whether or not the organism, under the favorable conditions of warmth and food as found in the udder, or possibly in the cans after standing, might not have produced a ptomaine which, in its action upon the human intestine and other systems, was capable of producing a disease resembling typhoid fever. The cows were removed from this feeding ground and taken to another farm ten miles away. The milk from these cows continued to be sold in the town, and yet there appeared no more cases of the disease. Such an examination should be made at once, and by a corps whose special lines would be working at once that the epidemic character of the disease may be checked. One of the difficulties presented by delay in commencing the investigation was shown here. The customers of this particular milkman had become suspicious of the milk on account of there being several cases in his family and up to that time one death. As a result they refused to be supplied longer by him and obtained their supply from other milkmen. Naturally the other milkmen had not a sufficient supply to meet this sudden demand, the suspected milkman had more to sell on account of his losing customers, so he naturally supplied the other milkmen who were short, so that when the writer began the investigation he had more to unravel than if it was taken at the beginning. The above transactions actually took place, and the suspected dealer often was sold out before the other dealers.

The second epidemic[1] to which I wish to refer is a "short, sharp and decisive" one which occurred in Providence during the past fall. The disease was typical typhoid fever. The control was as follows:

The writer, as Medical Inspector, received the reports of all cases from the physicians attending. The premises of the cases were inspected, the sanitary conditions were at once improved when necessary, printed regulations as to disinfection were distributed, and cleanliness of the hands and cooking utensils urged upon the nurses and attendants. The sources of the water, ice, milk, etc., were noted. Within a week it was evident that an unusual number of cases were occurring. The Superintendent of Health immediately increased the force of medical inspectors in order that all cases reported in a morning's mail might be inspected before the following day.

No three milk supplies were from the same source. The sanitary conditions of the premises were comparatively good. The water supply was, however, common to all, namely, the city river supply. The Superintendent of Health at once suspected the river, and found that the river had been polluted with typhoid excrement about eighteen days previous during a heavy rainfall, the stools from typhoid patients having been thrown on the banks of the river for two or three months.

Fæces from the typhoid cases were examined and the typhoid bacillus found. Cultures taken from the spleen of the only autopsy made developed all cultures of the same bacillus, and the lesions of the intestines were typical of the disease.

Advantage was taken of the knowledge that

[1] The epidemic lasted about three weeks and between 200 and 300 cases occurred. The epidemic increased suddenly and as suddenly declined. See Report Supt. of Health, Providence, 1889.

small domestic filters are collectors of filth, and with this filth organisms of various sorts accumulate and increase with great rapidity in numbers.[2] Several of these small filters were taken from the faucets supplying water in houses where the disease existed, and were submitted to bacteriological examination by three bacteriologists independent of each other. Two of the three found the typhoid bacilli within the water of the filters, and from one developed great quantities of organisms found commonly in fæces.

All this was done at the commencement of the epidemic, as the Health Department had at its disposal the means and willingness to make a study of associations and, being in working order, was at an early date cognizant of the presence of the disease and of all the conditions by the daily reports of the Medical Inspector. As the only precautionary measure possible, the public were at once advised to boil all drinking-water in order to destroy any specific organisms which might have found their way to the tap, and to remove all filters from the faucets. The epidemic rapidly subsided, whether from cessation of the contamination or from the destruction of the bacilli in boiling the water it is impossible to say ; probably much from both.

CHRONIC CYSTITIS IN THE FEMALE.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY AUGUSTUS P. CLARKE, A.M., M.D.,
OF CAMBRIDGE, MASS.

Of the various diseases the gynecologist is called upon to treat but few have oftener proved more vexatious or intractable than chronic cystitis. After a careful study of the pathology and histology of this peculiar condition several factors appear to comprise, to a greater or lesser extent, either singly, variously or remotely, its etiology. The lesions or morbid processes giving rise to cystitis, whether in the acute or chronic stage, are numerous. Each case should be considered according to its own history and peculiar indications. In the consideration of the subject of cystitis it is well to keep in mind the structure and anatomical relations of the mucous membrane of the bladder. Reference to the character and arrangement of the epithelial cells shows that there are several layers. The deeper layers are composed of cells that are conical or cylindrical in appearance. The superficial layer of the mucous membrane is provided with a squamous epithelium. The same arrangement is continuous with the structure of the urethra. This epithelial structure of the mucous membrane extends to the urethra, where numerous racemose mucous glands, the glands of Littre, have ducts opening on its surface. Littre's glands vary in size. They often exceed 1 millimetre in diameter and attain from 3 to 6 millimetres in length. Their office is to secrete mucus which protects the subjacent structure from immediate contact with the urine and from ferments or poisons which so frequently gain access into the urethra and bladder. The submucous coat is also provided with an extensive plexus of veins and loose areolar or connective tissue. The muscular coat of the urethra is formed of two layers, and is continuous with that of the bladder. This arrangement of parts gives the urethra and ostium vesicæ not only a remarkable power of distensibility but also a wonderful immunity against ordinary accidents and conditions that occur to the viscus itself.

In reading some of the published articles and discussions on cystitis a person unacquainted with the subject might be led to suppose that the formation of the structure of the female urethra and bladder is of such a nature as to be totally devoid of any important resisting power against the open or insidious attacks of the elements within or without, and that on the event of the urine becoming concentrated or a bacterium termo gaining admission into its folds the most disastrous consequences may be expected to follow. It should not be forgotten that the urine which is pale and of low specific gravity, voided by the nervous or hysterical female, often causes quite as much irritation or pain as is experienced in cases in which there is an abundance of sediment. In the treatment of cystitis the point should be emphasized that the symptoms present are often but a mere expression of the organ that there has occurred a lesion or a morbid process, and possibly at a distance from the part seemingly affected. In every case the true factors should be sought for and considered.

The following cases are appended to show the importance of some of the factors entering into the causation of the affection.

Case 1.—Mrs. R., æt. 21 years, married three years, miscarried in January, 1888. She recovered and remained in good health until January, 1889, when she began to suffer from severe cystitis. The patient consulted a female physician who prescribed vaginal irrigation of water at the temperature of 100° F., as well as the hot pack. This treatment was continued for some weeks without any marked beneficial effects. At th time I was called, April 17, I found the patient was four months advanced in pregnancy. She was suffering from a marked anteflexion. The suffering caused by the cystitis was unusually severe ; there was also nausea and morning sickness. The patient was kept in bed ; the uterus was restored and maintained in the proper position, at first by vaginal tampons, later by a properly fitting pessary and an abdominal belt. After two weeks of treatment nearly all vesical

[2] See Proceedings of Rhode Island Medical Society, 1888.

disturbance ceased, the nausea and vomiting in great measure passed away.

The importance of fibrous adhesions or cicatricial bands in prolonging an attack of cystitis occurred some years ago in the case of Mrs. D., æt. 37 years. The patient had been married but had borne no living children. There was a history of pelvic inflammation from which she had recovered, but a cystitis remained which was a constant source of trouble. When I was called to treat her a vaginal examination was refused. At length I succeeded in convincing the patient that an examination was necessary I found a strong fibrous band connecting the posterior lip of the cervix to the vaginal wall below. This firmly held the uterus and dragged upon the bladder. The index finger could be made to pass around it when it was divided, and the uterus and the bladder were restored without further trouble. The patient soon recovered from the vesical disturbance.

Vascular growths within the meatus urinarius often give rise to very distressing symptoms of cystitis. At the meeting of the Ninth International Medical Congress held in Washington, D. C., September, 1887, I presented to the Section in Gynecology a paper on the histology and pathology of these growths. I also reported several cases in which the removal of the growths was followed by relief of all distressing symptoms. Diseases and injuries of the ovaries often give rise to prolonged and intractable attacks of cystitis. Mrs. G., æt. 34 years, mother of two children, was of sound constitution and in good health until January, 1888, when, on alighting from a horse-car, she sustained concussion of the right ovary. There was severe shock at the time, and the patient was kept in bed for some three weeks, and was unable to attend to any of her domestic affairs for three months. Careful examination revealed a thickening of the vault of the vagina on the right, also an undue closure of the cervix. There was no displacement of the ovary; her menstruation was disturbed and for awhile became irregular. The disturbance extended to the urinary organs. Though repeated examinations of the urine showed no signs of the presence of pathological processes of the bladder, an intractable attack of cystitis nevertheless supervened, which continued more or less even after the legal settlement of the claim against the company had been made.

Mrs. L., æt. 34 years, of a phthisical family, had a history of pelvic inflammation of long standing. There was a manifest enlargement of the left ovary which from time to time was the source of great annoyance and was attended occasionally with severe cystitis. Repeated examination of the urine gave only negative results. Opiates and other remedies usually employed gave only temporary relief. Washing out the bladder with a solution of nitrate of silver, 30 grs. to the ounce, as has been recommended by some writers, though a painful procedure, yielded most excellent results.

Anal and rectal inflammations are not uncommon causes of cystitis. Mrs. E., æt. 33 years, who had been married and was a primipara, began in March, 1881, to suffer from cystitis. I was first called in attendance April 28, 1881. At the time I was called there was severe pain and irritation of the urinary passages. The urine had to be voided at frequent intervals and each effort was attended with much strangury. The urine was turbid, the deposit being amorphous urates. Vaginal examination revealed nothing of importance. There were internal hæmorrhoids and a fissure on the anterior aspect of the rectum. Under ether the hæmorrhoids were removed and the anal sphincter ruptured. This was followed by speedy relief and the patient in a short time was fully restored to health.

Another case in which a severe and prolonged cystitis was caused by reflex symptoms was that of Miss F., æt. 19 years. So marked and severe were the symptoms that, before the case was fully investigated, nothing but a calculus was believed to be the cause of the trouble. The urine for a long time had contained a deposit of white corpuscles resembling that of pus and mucus. Under ether an anteflexion of the uterus was discovered which on being restored and held *in situ* by properly fitting pessaries, the painful symptoms at length yielded and the urine finally became normal in appearance.

Sometimes urethritis accompanied by cystitis arises from a contracted and an hypertrophied condition of the meatus. In such cases micturition is usually accompanied by more or less tenesmus. This condition of the parts may continue for years and cause a great deal of suffering. In the treatment nothing has given me so great a satisfaction as that of rapid dilatation of the urethra. Mrs. R., æt. 60 years, had suffered for five years from painful micturition. No cause at first could be assigned for this affection. The urine was turbid, alkaline, and contained an abundance of mucus and triple phosphates. The patient had been under a long course of constitutional treatment without any apparent benefit. At the time I was called, October 30, 1876, the meatus and urethra were abnormally narrow and the parts around were thickened. Under ether the urethra was dilated sufficiently to admit the index finger. The patient speedily recovered and there has been no return of the affection. Since that I have resorted to the method of rapid dilatation in cases in which tenesmus is a leading feature, and in which the tissues around have been contracted and hypertropied.

There are cases of vesical catarrh in which the walls of the bladder have become so changed and hypertrophied, and the tenesmus so marked a

feature that rapid dilatation, even when supplemented by irrigation carried out with the most improved means at hand, utterly fails to afford relief. In such cases Emmet's operation for artificial vesico-vaginal fistula is not only justifiable but imperatively demanded. On January 24, 1873, I was called to attend Mrs. F., primipara æt. 48 years, who had suffered for several months from vesical catarrh accompanied by violent tenesmus. As every method of treatment tried proved unavailing I advised that the bladder should be incised through the vaginal wall in order to insure easy and complete drainage of that viscus. The advice was readily accepted; accordingly, on February 1, 1873, under ether, an incision was made through the vaginal wall into the bladder. Drainage for awhile was maintained by means of a short silver catheter. The distressing symptoms soon gave way, and on February 26 the patient felt such a sense of relief that she regarded herself as substantially cured. The artificial fistula closed spontaneously. The patient lived thirteen years after, and during that period there was no return of the complaint. Since then the relief afforded in other cases in which this method was adopted has been almost as singularly marked. Of course the difficulties sometimes attending the subsequent closure of an artificial fistula must not be altogether overlooked. Speaking from my own experience, I have found that the cases in which the operation for kolpocystotomy or artificial vesico-vaginal fistula is required are such as have lasted for years. The mucous membrane will often be found detached, and an inflammation extending to the muscular and even to the serous coats. The mucous and vaginal surfaces will often be found encrusted with phosphatic deposits and other products that emit an offensive odor. Should the inflammation continue unchecked, permanent contraction of the bladder would ensue, the ureters would become congested and occluded, the urine become alkaline and loaded with mucus, pus or other abnormal products. Although it would be deemed rash and unnecessary to resort to the operation for kolpocystotomy in all cases of troublesome cystitis, on the other hand, should the operation be deferred until all other methods have failed, the integrity of the kidneys will be jeopardized and all opportunity for cure or relief may be lost. The following case illustrates in some measure the importance of this statement: Mrs. D., æt. 31 years, was the mother of three children, the youngest of whom was 5 years. The labors were normal and she recovered well from each confinement. The last confinement occurred in August, 1880. During the month of May, 1881, the patient sustained a severe fall from a flight of stairs, fracturing her right leg in the upper third and injuring her back and loins. The fracture at the time was attended to, and a satisfactory union took place. After the second week of the injury a cystitis more or less severe supervened. There was, however, no paralysis of the limbs, and the patient was not prevented from going out and taking short drives and considerable exercise on foot. During the spring of 1882 the cystitis became more severe. The patient was confined to bed. An examination showed there was no flexion or displacement of the uterus. The ordinary course of treatment was pursued, including vaginal and vesical irrigation. All operative measures proposed were declined. The case dragged on until the autumn of 1885, when it terminated fatally. The autopsy showed that the bladder was thickened and contracted into a small mass. The ureters were thickened and plugged and also tortuous; the kidneys were found to be in a state of granular degeneration.

In reviewing the history and symptoms of this case I have no doubt, had operative measures in the spring of 1882, when the troublesome symptoms became so pronounced, been undertaken and carried out from time to time as indicated, the patient's life would have been saved and much severe suffering prevented.

Sometimes cases of cystitis that are apparently quite severe readily yield to the milder means of treatment. Faradism with one pole near the urethra and the other over the bladder gives speedy relief. Saline laxatives and mineral waters are of great benefit in the treatment. A douche of corrosive sublimate 1–2,000 will often prove beneficial in cases in which no marked organic changes have occurred, and in which the troublesome symptoms are due to septic ferments and to uncleanliness generally. No general rule or special course of treatment can be laid down that is applicable alike in all cases. Suffice it to say that each case as it occurs must be studied and treated according to the peculiar indications. The medical attendant should recognize the fact that some cases of chronic cystitis apparently very formidable, as already stated, will readily yield to the simple and mild method of treatment employed; while others may occur that will defy all recognized methods of treatment and can be cured or corrected only after the most skilful and ingenious operations have been resorted to.

A Munificent Friend of the Sick.—The name of the donor of the large sum of a hundred thousand pounds for a convalescent home near London has come to light, notwithstanding his wishes to keep in the background; his name is Peter Reid. He has already been prominent for generous interest in hospitals and other charitable institutions, but his last grand gift to the sick poor of London was announced as from an anonymous source in January last.

ALCOHOLIC TRANCE IN CRIMINAL CASES.

Read in the Section of Medical Jurisprudence, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY T. D. CROTHERS, M.D.,
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The frequent statement of prisoners in court that they did not remember anything about the crime they are accused of, appears from scientific study to be a psychological fact. How far this is true in all cases has not been determined, but there can be no question that crime is often committed without a conscious knowledge or memory of the act at the time.

It is well known to students of mental science, that in certain unknown brain states memory is palsied, and fails to note the events of life and surroundings. Like the somnambulist, the person may seem to realize his surroundings and be conscious of his acts, and later be unable to recall anything which has happened. These blanks of memory occur in many disordered states of the brain and body, but are usually of such short duration as not to attract attention. Sometimes events that occur in this state may be recalled afterwards, but usually they are total blanks. The most marked blanks of memory have been noted in cases of epilepsy and inebriety. When they occur in the latter they are called *alcoholic trances*, and are always associated with excessive use of spirits. Such cases are noted in persons who use spirits continuously, and who go about acting and talking sanely, although giving some evidence of brain failure, yet seem to realize their condition and surroundings. Some time after, they wake up and deny all recollection of acts and events for a certain period in the past. This period to them begins at a certain point and ends hours or days after, the interval of which is a total blank, like that of unconscious sleep. Memory and certain brain functions are suspended at this time, while the other brain activities go on as usual. In all probability, the continued paralysis from alcohol not only lowers the nutrition and functional activities of the brain, but produces a local palsy, followed by a temporary failure of consciousness and memory, which after a time passes away.

When a criminal claims to have had no memory or recollection of the crime of which he is accused, if his statement is true, one of two conditions is probably present, either epilepsy or alcoholism. Such a trance state might exist and the person be free from epilepsy and alcoholism, but from our present knowledge of this condition it would be difficult to determine this fact. If epilepsy can be traced in the history of the case, the trance state has a pathological basis for its presence. If the prisoner is an inebriate, the same favoring conditions are present. If the prisoner has been insane, and suffered from sun or heat stroke, and the use of spirits are the symptoms of brain degeneration, the trance state may occur any time. The fact of the actual existence of the trance state is a matter for study, to be determined from the history of the person and his conduct; a grouping of evidence that the person cannot simulate or falsify, evidence that turns not on any one fact, but on an assemblage of facts that point to the same conclusion.

The following cases are given to illustrate some of these facts, which support the assertion of no memory of the act by the prisoner in court:

The first case is that of A., who was repeatedly arrested for horse stealing, and always claimed to be unconscious of the act. This defense was regarded with ridicule by the court and jury, and more severe sentences were imposed, until finally he died in prison. The evidence offered in different trials in defense was, that his father was weak-minded and died of consumption, and his mother was insane for many years, and died in an asylum. His early life was one of hardship, irregular living, and no training. At 16 he entered the army, and suffered from exposure, disease and sunstroke, and began to drink spirits to excess at this time. At 20 he was employed as a hack driver, and ten years later became owner of a livery stable. He drank to excess at intervals, yet during this time attended to business, acting sanely, and apparently conscious of all his acts, but often complained he could not recollect what he had done while drinking. When about 34 years of age he would, while drinking, drive strange horses to his stable, and claim that he had bought them. The next day he had no recollection of these events, and made efforts to find the owners of these horses and return them. It appeared that while under the influence of spirits the sight of a good horse hitched up by the roadside alone, created an intense desire to possess and drive it. If driving his own horse, he would stop and place it in a stable, then go and take the new horse, and after a short drive put it up in his own stable, then go and get his own horse. The next day all this would be a blank, which he could never recall. On several occasions he displayed reasoning cunning, in not taking a horse when the owners or drivers were in sight. This desire to possess the horse seemed under control, but when no one was in sight all caution left him, and he displayed great boldness in driving about in the most public way. If the owner should appear and demand his property he would give it up in a confused, abstract way. No scolding or severe language made any impression on him. Often if the horse seemed weary he would place it in the nearest stable, with strict orders to give it special care. On one occasion he joined in a search for a stolen horse, and found it in a stable

where he had placed it many days before. Of this he had no recollection. In another instance he sold a horse which he had taken, but did not take any money, making a condition that the buyer should return the horse if he did not like it. His horse stealing was all of this general character. No motive was apparent, or effort at concealment, and on recovering from his alcoholic excess, he made every effort to restore the property, expressing great regrets, and paying freely for all losses. The facts of these events fully sustained his assertion of unconsciousness, yet his apparent sanity was made the standard of his mental condition. The facts of his heredity, drinking, crime and conduct, all sustained his assertion of unconsciousness of these events. This was an alcoholic trance state, with kleptomaniac impulses.

The next case, that of B., was executed for the murder of his wife. He asserted positively that he had no memory or consciousness of the act, or any event before or after. The evidence indicated that he was an inebriate of ten years' duration, dating from a sunstroke. He drank periodically, for a week or ten days at a time, and during this period was intensely excitable and active. He seemed always sane and conscious of his acts and surroundings, although intensely suspicious, exacting, and very irritable to all his associates. When sober he was kind, generous and confiding, and never angry or irritable. He denied all memory of his acts during this period. While his temper, emotions, and conduct were greatly changed during this time, his intellect seemed more acute and sensitive to all his acts and surroundings. His business was conducted with usual skill, but he seemed unable to carry out any oral promises, claiming he could not recollect them. His business associates always put all bargains and agreements in writing when he was drinking, for the reason he denied them when sober. But when not drinking his word and promise was always literally carried out. He broke up the furniture of his parlor when in this state, and injured a trusted friend, and in many ways showed violence from no cause or reason, and afterwards claimed no memory of it. After these attacks were over, he expressed great alarm and sought in every way to repair the injury. Finally he struck his wife with a chair and killed her, and awoke the next day in jail, and manifested the most profound sorrow. While he disclaimed all knowledge of the crime, he was anxious to die and welcomed his execution. This case was a periodical inebriate with maniacal and homicidal tendencies. His changed conduct, and unreasoning, motiveless acts, pointed to a condition of trance. His assertion of no memory was sustained by his conduct after, and efforts to find out what he had done and repair the injury.

The third case, that of C., was a man of wealth and character who forged a large note, drew the money and went to a distant city on a visit. He was tried and sentenced to State prison. The defense was no memory or consciousness of the act by reason of excessive use of alcohol. This was treated with ridicule. Although he had drank to excess at the time of and before the crime, he seemed rational and acted in no way as if he did not understand what he was doing. Both his parents were neurotics, and he began to drink in early life, and for years was a moderate drinker. He was a successful manufacturer, and only drank to excess at times for the past five years. He complained of no memory during these drink paroxysms, and questioned business transactions and bargains he made at this time. On one occasion he went to New York and made foolish purchases which he could not recall. On several occasions he discharged valuable workmen, and when he became sober took them back, unable to account for such acts. These and other very strange acts continued to increase with every drink excess. At such times he was reticent and seemed to be sensible and conscious, and did these strange acts in a sudden, impulsive way. The forged note was offered boldly, and no effort was made to conceal his presence or destination. When arrested he was alarmed and could not believe that he had done so foolish an act. This was a clear case of alcoholic trance, in which all the facts sustained his assertion of no conscious memory of the crime. In these three cases the correctness of the prisoners' assertions of no memory was verified by all the facts and circumstances of the crime. The mere statement of a person accused of crime, that he had no memory of the act, should lead to a careful examination and be only accepted as a fact when it is supported by other evidence.

The following case illustrates the difficulty of supporting a prisoner's statement of no memory when it is used for purposes of deception:

Case E.—An inebriate killed a man in a fight, and was sentenced to prison for life. He claimed no memory or recollection of the act. I found that when drinking he seemed conscious of all his surroundings, and was always anxious to conceal his real condition, and if anything had happened while in this state he was very active to repair and hush it up. He was at times quite delirious when under the influence of spirits, but would stop at once if any one came along that he respected. He would, after acting wildly, seem to grow sober at once, and do everything to restore the disorder he had created. The crime was an accident, and at once he attempted concealment—ran away, changed his clothing, and tried to disguise his identity; when arrested, claimed no memory or consciousness of the act. This claim was clearly not true, and contradicted by the facts.

In a recent case F. shot his partner in business while both were intoxicated, and displayed great cunning to conceal the crime and person; then, after elaborate preparations, went away. He made the same claim of defense, which was unsupported by any other evidence or facts in his previous life. He was executed. Of course it is possible for the trance state to come on suddenly, and crime be committed at this time; still, so far, all the cases studied show that this condition existed before, and was the product of a growth beginning in brief blanks of a few moments and extending to hours' and days' duration. Unless the facts indicated the trance state before the crime was committed, it would be difficult to establish this condition for the first time, followed and associated with the crime.

I think in most of these cases, where this defense is set up, there will be found certain groups of cases that have common physical conditions of degeneration. These groups of cases I have divided from a clinical standpoint, the value of which will be more as an outline for future studies.

Probably the largest number of criminal inebriates who claim loss of memory as a defense for their acts are the alcoholic dements. This class are the chronic inebriates of long duration: persons who have naturally physical and mental defects, and who have used spirits to excess for years. This, with bad training in early life, bad surroundings, and bad nutrition, have made them of necessity unsound, and liable to have many and complex brain defects. Such persons are always more or less without consciousness or realization of their acts. They act automatically only, governed by the lowest and most transient impulses. Crimes of all kinds are generally accidents growing out of the surroundings, without premeditation or plan. They are incapable of sane reasoning or appreciation of the results of their conduct. The crime is unreasoning, and general indifference marks all their acts afterwards. The crime is always along lines of previous conduct, and never strange or unusual. The claim of no memory in such cases has always a reasonable basis of truth in the physical conditions of the person. Mania is very rarely present, but delusions and morbid impulses of a melancholic type always exist. The mind, like the body, is exhausted, depressed, and acts along lines of least resistance.

The second group of criminals who claim no memory are those where the crime is unusual, extraordinary, and unforeseen. Persons who are inebriates suddenly commit murder, steal, or do some criminal act that is foreign to all previous conduct. In such cases the trance condition may have been present for some time before and escaped any special notice, except the mere statement of the person that he could not recollect his acts. The unusual nature of the crime, committed by persons who never before by act or thought gave any indication of it, is always a factor sustaining the claim of no memory. The explosive, unreasoning character of crime always points to mental unsoundness and incapacity of control.

A third group of criminals urge this statement of no memory, who, unlike the first group, are not imbeciles generally. They are positive inebriates, drinking to excess, but not to stupor, who suddenly commit crime with the most idiotic coolness and indifference, never manifesting the slightest appreciation of the act as wrong, or likely to be followed by punishment. Crime committed by this class is never concealed, and the criminal's after conduct and appearance gives no intimation that he is aware of what he has done. These cases have been termed moral paralytics, and the claim of the trance state may be very likely true.

A fourth group of cases where memory is claimed to be absent occurs in dipsomaniacs and periodical inebriates, who have distinct free intervals of sobriety. This class begin to drink to great excess at once, then drink less for a day or more, and begin as violently as ever again. In this short interval of moderate drinking some crime is committed of which they claim not to have any recollection.

Other cases have been noted where a condition of mental irritation or depression preceded the drink explosion, and the crime was committed during this premonitory period, and before they drank to excess. The strong probability of trance at this period is sustained by the epileptic character of such conduct afterwards. The trance state may justly be termed a species of *aura*, or brain paralysis, which precedes the explosion.

In some instances, before the drink storm comes on, the person's mind would be filled with the most intense suspicions, fears, delusions, and exhibit a degree or irritation and perturbation unusual and unaccountable. Intense excitement or depression, from no apparent cause, prevails, and during this period some crime may be committed; then comes the drink paroxysm, and later all the past is a blank. Trance is very likely to be present at this time.

In these groups the crime is generally automatic, or committed in a manner different from other similar crimes. Some governing center has suspended, and all sorts of impulses may merge into acts at any moment. The consciousness of acts and their consequences are broken up. The strong probability is that these trance blanks begin in short periods of unconsciousness, which lengthen with the degeneration and mental feebleness of the person. The obscurity of these conditions, and the incapacity of the victims to realize their import, also the absence of any special study, greatly increases the difficulty. It will be evident from inquiry that trance states

among inebriates are quite common, but seldom attract attention unless they come into legal notice. The practical question to be determined in a given case in court is the actual mental condition of the prisoner, who claims to have no recollection of the crime. This a class of evidence that must be determined by circumstantial and collateral facts, which require scientific expertness to gather and group. The court can decide from the general facts of the crime and the prisoner whether his claim of no memory may possibly be true, and order an expert examination to ascertain the facts. This should be done in all cases where the prisoner is without means, in the same way that a lunacy commission is appointed to decide upon the insanity. The result of this expert study may show a large preponderance of evidence sustaining the claim of no memory, or the opposite. If the former, the measure of the responsibility must be modified, and the degree of punishment changed. While such cases are practically insane at the time, and incapable of realizing or controlling their acts, they should be kept under legal and medical surveillance for a lifetime, if necessary. Such men are dangerous, and should be carefully watched and deprived of their liberty for a length of time depending on recovery and capacity to act rationally and normally. They are dangerous diseased men, and, like victims of contagious disease, must be housed and treated.

The future of such cases depends on the removal of the causes which made them what they are. The possibility of permanent restoration is very promising in most cases. How far alcoholic trance exists in criminal cases is unknown, but the time has come when such a claim by criminals cannot be ignored, and must be the subject of serious inquiry. Such a claim cannot be treated as a mere subterfuge to avoid punishment, but should receive the same attention that a claim of insanity or self-defense would. This is only an outline view of a very wide and most practical field of medico-legal research, largely unknown, which can be seen in every court room of the land. These cases appeal to us for help and recognition, and the highest dictates of humanity and justice demand of us an accurate study and comprehension of their nature and character.

The following summary of the leading facts in this trance condition will be a standpoint for other and more minute investigations:

1st. The trance state in inebriety is a distinct brain condition, that exists beyond all question or doubt.

2d. This brain state is one in which all memory and consciousness of acts or words are suspended, the person going about automatically, giving little or no evidence of his real condition.

3d. The higher brain centers controlling consciousness are suspended, as in the somnambulistic or hypnotic state. The duration of this state may be from a few moments to several days, and the person at this time may appear conscious and act naturally, and along the line of his ordinary life.

4th. During this trance period crime against person or property may be committed without any motive or apparent plan, usually unforeseen and unexpected. When accurately studied such a crime will lack in the details and methods of execution, and also show want of consciousness of the nature and results of such acts.

5th. When this condition passes away the acts and conduct of the person show that he did not remember what he had done before. Hence his denial of all recollection of past events, and his changed manner confirm or deny his statements.

6th. When such cases come under judicial inquiry the statement of the prisoner requires a scientific study before it can be accepted as a probable fact. It cannot be simulated, but is susceptible of proof beyond the comprehension of the prisoner.

7th. In such a state crime and criminal impulses are the result of unknown and unforeseen influences, and the person in this condition is dangerous and an irresponsible madman.

8th. This condition should be fully recognized by court and jury, and the measure of responsibility and punishment suited to each case. They should not be punished as criminals, nor should they be liberated as sane men. They should be housed and confined in hospitals.

ON THE ORGANIZATION AND ABSORPTION OF STERILIZED DEAD BONE DOWELS.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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AND BY
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Mr. Wm. Scovell Savory, in 1864, demonstrated, by a series of experiments performed upon various animals, principally the rabbit, that ivory pegs driven into healthy living bone would, after a time, undergo greater or less absorption. He found, however, that in order to obtain this result, it was necessary that the peg be driven tightly into a hole which was a trifle too small for it. Upon this observation, he concluded that firm pressure upon the surface of dead bone against the living was the essential factor in causing the absorption. His experiments were, of course, done long before the antiseptic era and we may

venture to assume that that gentleman to-day shares our opinion, that the dead bone was absorbed when it impinged firmly against the living because the closeness of its contact diminished the space for the accumulation of septic matter. Bone pegs have since been used to fix together extremities of bones after excisions; but we believe that the experiments here recorded are the first of the kind which have been performed, with antiseptic precautions, upon the lower animals, and with the view of determining how long foreign bone can be determined upon for giving fixation, and the ultimate changes which take place in it during the processes of absorption or organization, when placed in contact with living osseous tissue.

Experiment No. 1.—A large cur pup was etherized, and after exposure of the shaft of the right femur, a sterilized ox bone dowel was placed in a hole, which had been drilled transversely through the shaft, and was cut off flush with the surface. The incision for exposing the bone in this case, as in all the subsequent experiments, being carried down in the intermuscular septum overlying the linea aspera, little muscular tissue was divided, and hence but little bleeding occurred during the operation. The wound was approximated by a continuous suture of chromicized catgut, and was sealed with collodion and powdered iodoform. The wound healed without suppuration, and at the end of five weeks the dog was again etherized and the section of the femur in which the bone dowel had been placed, was removed. From this, as from other experiments, Dr. Allen J. Smith made careful microscopic sections, the best of which were unfortunately destroyed in the fire at the histological laboratory of the University of Pennsylvania. The remarkable changes which occurred in five weeks are shown in Figure 1, and in the microscopic section, Figure 2. Two distinct phenomena are apparent: that of organization, and that of absorption. The extremities of the dowel which were in contact with the shaft of the femur had become thoroughly organized, being full of Haversian canals continuous with those of the dog bone, of which they had become part; and on fresh section showed the pink hue of living vascular bone. The intervening portion, between these extremities, corresponding to the medullary cavity, showed no attempt at organization, as it was pure white on fresh section, and contained no Haversian canals, but the erosions on its surface clearly indicated that rapid absorption was taking place.



FIGURE 1. Showing bone dowel after five weeks undergoing organization and absorption.

A deep furrow which surrounds the dowel at the point where it penetrated the periosteum, shows an effort of this membrane to sever that portion of the dowel which projected beyond the level of the shaft of the femur, and would in all probability, had the action gone on, have allowed this free portion to drop off into the surrounding tissues.

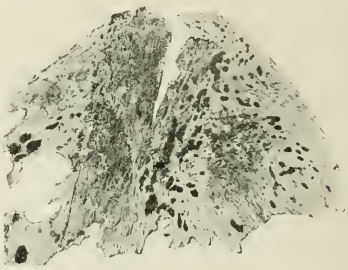


FIGURE 2.—Showing microscopic appearances of Experiment No. 1.

Experiment No. 2.—The left femur of a healthy carriage dog was exposed and a dowel an eighth of an inch in diameter was introduced, as in the preceding experiment. At the end of seven weeks the femur at the site of the operation was again sought, and the only evidences that remained of the introduction of the peg were pin-point dimples in the opposite sides of the shaft of the bone. This section was sent to Dr. Smith unsawn, and we have his statement that organization and absorption had been so complete that almost all vestiges of the dowel had disappeared. All of the microscopic sections from this specimen were destroyed in the fire. Figure 3 represents a memory sketch.

Experiments Nos. 3, 4, 5, 6, 7, 8, 9 and 11 were all done with the view of determining the effect produced by splicing together the fragments of the femur with bone after it had been divided. While the success attained in these experiments was only measurable, they may be considered

satisfactory when the inordinate liberties which were taken with the bone are remembered. The simplest form of splicing was done by two transfixing dowels, as would be applicable to the fixation of a simple oblique fracture. A transverse section of the shaft was spliced by the introduction of a dowel, which accurately fitted into the medullary cavity one inch or less on either side of the fracture; the pin being, in some of the experiments, held in position above and below by

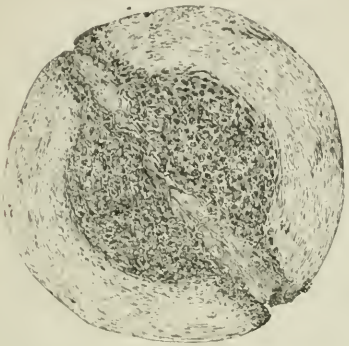


FIGURE 3.—Memory sketch of the appearances of bone dowel after seven weeks.

cross-pins of a smaller size, made to pass through it and the shaft of the bone. Again, an hiatus in a resected femur was filled up by a medullary splice, retaining the fragments at a distance of half an inch apart. The material of which this medullary pin was composed was either dead bone or freshly removed living dog-bone.

All of these cases suppurated, and at the end of periods varying from nine weeks to nine months the dog was killed and the femur removed. In all more or less necrosis was found to have occurred, accompanied by different degrees of osteitis, and without organization of the dowels. The best result was obtained in Experiment No. 7. Three-fourths of an inch (containing in it the site of a previous experiment) of the femur was

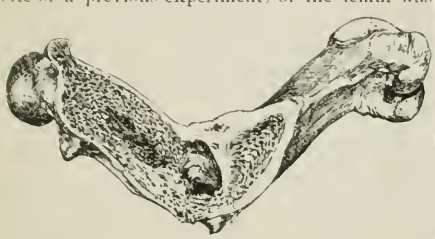


FIGURE 4.—Femur of dog in which dowel filled medullary cavity, after nine months; entire absorption, union with angular deformity.

resected and a dowel a quarter of an inch in diameter introduced into the medullary cavity, which latter had been reamed out with a quarter inch drill. This joint was made very firm by eighth-of-an-inch cross pegs, above and below. In this case a sinus continued for several months, but finally closed, leaving the dog with a very strong, useful limb. At the end of nine months the dog was killed and the femur removed. Firm union, with angular deformity (Figure 4), was found to have taken place; a few small fragments of necrosed dog-bone, undergoing absorption, were found on section in a small cavity; but no signs remained of the heavy medullary dowel, nor of the small cross pegs.

Experiment No. 10.—Experiment No. 10 was simply a repetition of experiments Nos. 1 and 2, the dowel being allowed to remain eight weeks. The processes of absorption and organization were found to have gone on, as in the other cases, to a somewhat more advanced degree. Throughout its entire length, extension of the blood vessels of the bone had penetrated the dowel (Figure 5), particularly so at points where it was in continuity with endostium.

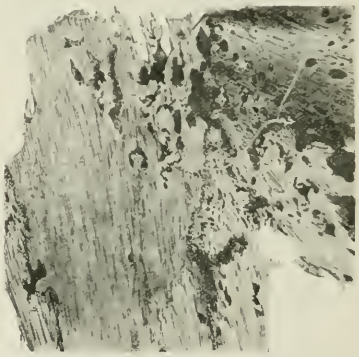


FIGURE 5.—Showing microscopic appearance of bone dowel after eight weeks (the dowel occupying the left side of the field).

Mode of Preparation.—The dowels used in these experiments were made from ordinary beef bone, as it is prepared for use in the arts. They were sawn into square rods, and then turned by *dowel-cutters* of appropriate sizes. After thorough boiling they were placed in an alcoholic solution of corrosive sublimate (1–1000), ready for use. They were not found to swell at all in this solution, and therefore accurately fitted the drill-holes made for them, even after prolonged immersion.

The only cases which have come under our observation in which these dowels were used upon the human subject, were in two osteoplastic resections of the foot, after the method of Wladimiroff-Mikulicz, performed, the one by Dr. Ferdinand Gross, at the German Hospital in Philadel-

phia, in 1888, and the other by Dr. W. B. Hopkins, at the Episcopal Hospital, in 1887. In both these cases dowels were used to fix the tarsus to the leg. In both they answered a good purpose, and gave rise to no subsequent trouble.

From these experiments we base the following deductions:

First. That where sterilized dead bone is placed, under favorable circumstances, in contact with living bone, it undergoes organization. When, on the other hand, it is acted upon by periosteum it is absorbed, and when placed in the medullary cavity, in not too large bulk, organization combined with absorption takes place.

Second. That these processes go on, perhaps, most actively between the fifth and the eighth week, and are not necessarily associated with any inflammatory action.

Third. That therefore, where these dowels are employed to pin together fragments of bone after fracture, to fix the extremities of bones after resections, or for any other mechanical purpose in surgery to which they are adapted, they may be relied upon to do their work for a period of one month or six weeks, and hence to give ample time, as a rule, for union to occur. After this, their presence being no longer required, they gradually lose their identity in the surrounding bone, and disappear.

MEDICAL PROGRESS.

The Bacillus of Diphtheria and its Pathogenic Value.—From January 1 to May 1, 1889, twenty-nine persons, among them twenty young girls, were attacked by diphtheria in the little village of Horn, in the Netherlands; the mortality from the disease was 34 per cent.; its origin remained undiscovered. For two years before no case of diphtheria had been observed among the chickens or pigeons of this locality.

The authors, Messrs. Sprouck, Wintgens and Doets, were able to make bacteriological studies of the pseudo-membranes at various stages of the disease, which in 37 per cent. of the cases was accompanied by progressive paralysis which, except in one case, did not extend to the larynx.

In the seven cases which they studied they were able to obtain pure cultures of the bacillus described by Klebs in 1883, but they were not able to find the spores described by Babès.

Rats and mice proved refractory to subcutaneous inoculation made from these cultures, which, however, proved fatal to guinea pigs and rabbits in five or six days; after some days of entire freedom from symptoms, these animals displayed, among other morbid phenomena, a paralysis beginning in the hind legs, and then becoming general. If tracheotomy was first performed and the wounded mucous membrane was inoculated from the cultures, characteristic pseudo-membranes soon formed.

The bacilli found by these investigators in the false membranes were not discoverable in the lymphatic glands, the blood, or the viscera. The activity of the poisoning depends upon the presence of a chemical substance produced by the bacilli in the bouillon which is injected; this substance becomes more active in proportion to its age; the injection in the auricular vein of half a cubic centimetre of a culture sterilized by filtration, and twenty-eight days old, is sufficient to kill a rabbit in three days. The injections of filtered cultures produce true nephritis with albuminuria; the same filtered cultures lose their toxic power when boiled.—*La Sem. Méd.*

Cure of Malignant Anthrax.—The state of a patient in the later stages of malignant anthrax is desperate, and recovery very unusual. Dr. Lande describes in the *Mémoires de la Société de Médecine de Bordeaux*, 1889, two cases where this condition was reached, yet the patients were saved by subcutaneous injections of carbolic acid. In the first case, a man aged 27, the upper lip was the seat of anthrax; in the second, a woman aged 65, the anthrax developed on the interscapular region. Both subjects were very ill, low delirium and other unfavorable symptoms being present. The injections were generally made into the subcutaneous tissue of the peripheral inflamed zone of the anthrax. The strongest solution used when the symptoms were severe consisted of 15 grams of neutral glycerine and an equal part of distilled water, in which 3 grams of crystals of carbolic acid were dissolved. The injections were made at five points around the anthrax, and represented a total dose of 50 centigrams of pure carbolic acid. This solution caused severe pain, but rapid improvement of the symptoms. This 10 per cent. solution was stronger than any previously employed for the same purpose by Boeckel, Raimbert and others. Nevertheless, it does not appear to cause sloughing of the tissues. A 5 per cent. solution is strong enough, in the opinion of Dr. Lande, except in very severe cases where the patient feels little pain. The injections must be repeated until the bad symptoms cease to recur, which may occur within forty-eight hours.

Nitrite of Amyl is commended as the most rational and successful antidote to use where chloroform or cocaine seem to threaten life by their unfavorable action on the heart. A few drops of nitrite of amyl administered by inhalation will be one of the most probable means of restoring the heart's action.

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SATURDAY, APRIL 5, 1890.

ELECTRICITY FOR FIBROIDS.

The present status of electricity in gynecology was very elaborately portrayed the evening of November 27, 1889, at the New York Academy of Medicine, at a meeting which will become memorable for bringing together the opinions of the majority of those in America who have a right to be considered authorities on this subject.

No subject in gynecology during the last few years has received more attention than the one of treatment of fibroid tumors of the uterus. Upon one side we have arrayed the surgeons with the oöphorectomy and the hysterectomy as the alternatives, while opposed to them are the equally stubborn conservatives with galvanism as a remedy *par excellence*, to be dosed accurately according to the prescription of DR. GEORGE APOSTOLI.

The importance of the question leads us to give from the electricity standpoint, the gist of the views of those taking part in the discussion at the late Academy meeting, with conclusions by the writer derived as a result of a perusal of the entire evening's proceedings.

On this subject DR. ALEXANDER J. C. SKENE, of Brooklyn, said: One class of men has condemned this treatment without mercy. Another class has obtained the most perfect results—and still another class has had an intermediate experience. They have been able to relieve their patients of most or all of their symptoms, and have diminished the size of the tumors or retarded their growth.

Dr. Skene continues: "I have accepted the testimony of this latter class of witnesses because it apparently contained the most truth, and also because it agreed with what little experience I have had in my own practice. It has also been claimed that this agent is dangerous, but that has been fully met by the fact that all the benefit can be obtained without taking the risks that were at one time supposed to be unavoidable.

"Perhaps the most important question in the whole discussion is the relative merits of this and other methods of treatment. The claims of hysterectomy and the removal of the ovaries for fibromata have been urged with great vigor by those who are strongly addicted to surgery. There is, however, no evidence that this kind of surgery is safer or surer in its results than electricity."

DR. A. D. ROCKWELL, of New York, said: "That the galvanic current often completely dissipates fibroid tumors of the uterus few will, I believe, affirm. . . . As a rule, the reduction is comparatively slight unless suppuration is excited, which may be easily done. . . . We treat uterine fibroids not because they are unsightly, but because associated with them are a train of symptoms sometimes of the most distressing character. These symptoms can, it is believed, be relieved to a greater or less extent by electrolysis, and sometimes so completely relieved as to lead to the belief, so far as the patient is concerned, that the tumor has entirely disappeared . . . it is simply a symptomatic cure."

DR. AUGUSTIN H. GOELET, of New York, said: "It would seem unnecessary to add further testimony in favor of the treatment of uterine fibroids by electricity, since such authorities as SPENCER WELLS and THOMAS KEITH have abandoned hysterectomy and openly avow themselves in favor of APOSTOLI's method. As to fibroids, it does not always dissipate the tumor entirely, but the size is very materially lessened; its growth is arrested and the symptoms are relieved. The pain is promptly lessened, hæmorrhage is absolutely controlled, and, as the tumor becomes reduced in size, the pressure symptoms are likewise removed."

DR. E. L. H. MCGINNIS, of New York, said: "That it is slow in its effects I know, and we must not be disappointed if marked diminution in the size of the mass is not noticed at once. The great majority of cases show little change under a month of treatment, which should be ap-

plied three times weekly. But I have found one (very rarely, two) thorough applications quite sufficient to control the most obstinate hæmorrhage, provided a sufficiently strong current is used, and, what is *most* important, that every part of the endometrium be brought in contact with the electrode."

Dr. A. H. Buckmaster, of Brooklyn, recited some important experiments which have a direct clinical bearing on the subject, among others is the following: "The heart of an anæthetized dog was exposed and a current of forty milliampéres made to traverse a portion of the ventricle. A piece of the ventricle in the direct line of the current was excised and another some little distance from the direct influence of the current. When examined under the microscope the piece from the direct line of the current showed that the striæ had become markedly granular, while the piece outside of the direct line of the current preserved the muscle cells unaltered. This granular appearance of the striæ would indicate degeneration of the muscle bundles. . . . This is the first evidence of absolute molecular disintegration of living cells by the interpolar action of the galvanic current, where such process is confined to the cells."

Dr. Paul F. Mundé, New York, in speaking of Aportoli's method said, that while he believed it efficient for the removal of pain and the checking of hæmorrhage, and admitted that the patients felt better for its use, not a single tumor which had come under his notice had been much reduced in size. He considered the galvano-puncture through the vagina the ideal treatment. The four cases in which he had employed it had been absolutely cured—that is the tumors disappeared entirely, not a vestige being left.

Dr. Franklin H. Martin, of Chicago, said: "My experience in the treatment of fibroid growth of the uterus by electricity amounts, in round numbers to two hundred cases. In that number of cases, not more than five failed to continue the treatment until results could be estimated. Of those who continued treatment and made a fair test of its value, up to the present time but three have failed to obtain relief. I am fortunate, considering the great number and variety of cases treated, to be able to record no deaths; the results on the whole have been extremely gratifying. About 84 per cent. are symptomatically cured, with an additional 4 per cent of actual cures."

Among the names of those giving testimonies in behalf of electricity at this meeting will be noticed not only those with reputations as electricians, but also those having reputations among the first of our American gynecologists. The general tone of the discussion was calm, and particularly free from the exuberant and unsafe positivism of the enthusiastic hobbyist. From a perusal of its records we formulate the following conclusions:

1. Electricity will relieve the pain due to pressure and sympathetic disturbances in the majority of fibroid tumors treated by that agent, in from one to six applications.

2. Hæmorrhage due to fibroids can be relieved by the positive galvano-caustique applications of electricity in all cases in which a sufficiently concentrated dose can be applied to the greater portion of the endometrium.

3. A large percentage of tumors of enormous size can be checked in growth and often reduced in size by an intelligent and persistent application of this agent, while tumors of medium and smaller size can be markedly reduced, and in a few instances be made to totally disappear.

4. The majority of patients, while under this form of treatment, improve rapidly in general health from the characteristic tonic effect exerted upon the whole system.

5. According to the only statistics given, 84 per cent. of patients submitted to the treatment are symptomatically relieved, 4 per cent. absolutely cured, while 12 per cent. are not benefited, or failed to make a fair test of the treatment.

6. The treatment is not by any means painless in a large number of cases, although an anæsthetic is seldom resorted to. A well tried system of concentration, however, has been adopted, by which, as a rule, all the benefits of the agent can be obtained without transcending the toleration of the patient.

The New York Ophthalmological Society has elected the following officers for 1890: Dr. Samuel B. St. John, of Hartford, President; Dr. H. S. Oppenheimer, Vice-President; and Dr. John E. Weeks, Secretary and Treasurer.

THE ELIMINATION OF MORPHINE INJECTED HYPODERMICALLY THROUGH THE STOMACH.

At the meeting of the Society of East German Alienists at Jena, June 12, 1889, Dr. Hitzig, of Halle, reported some investigations which his assistant, Dr. Alt, had been making upon this subject. His attention was first called to it by observing that a dog that ate the matter vomited by another dog, to which a hypodermic injection of morphine had been administered previously, also vomited in a short time. A chemical test of the matter vomited by the first dog revealed the presence of morphine. Experiments by washing out the stomachs of dogs shortly after the hypodermic administration of the drug showed that its presence could be demonstrated in the stomach in 2¼ minutes after the injection, and that it continued to be eliminated for about an hour. If the stomach was washed out, vomiting did not take place, showing that it was a reflex phenomenon due to the presence of the drug in the stomach, and not a consequence of its direct action on the central nervous system. The other symptoms of poisoning by morphine could also be mitigated by this means, and the lives of dogs thus preserved to which doses of morphine had been given, which were otherwise inevitably fatal. In two cases the animals were kept alive and recovered promptly, after receiving nearly 50 per cent. more than the usually fatal dose. Thus, strange as it might seem, washing out the stomach after poisoning by hypodermic injection proved a life-saving operation. A third of the morphine administered could be recovered in this way within twenty minutes after the injection. Analogous results were obtained by experiments on men. The practical bearing of these facts in cases of poisoning by hypodermic injection of morphine is obvious, and it would seem possible that in case of an overdose taken by the mouth, excretion by the stomach might take place after its contents had been evacuated.

THE SO-CALLED "PECULIAR PEOPLE" AND CONTAGIOUS DISEASE.

There exists in England a small sect known as the "Peculiar People" whose members resemble certain faith-healing zealots in our own country in the respect that they will not use medicines for the cure of disease and will not employ physicians. In two parishes of Essex, Cressing and White Notley, there has recently been an outbreak of small-pox attended by circumstances, which in the opinion of *The Lancet* tended dangerously to the kindling of a general epidemic. A member of these Peculiar People contracted the disease and neglected every recognized medical and sanitary precaution. The patient had his friends calling upon him with entire freedom, and four or more of these visitors were taken down with the disease also. It was then that the health officials of the locality became aware of the impending spread of the trouble and went to work energetically to check it, and fortunately with success. The position of these officials was an embarrassing one at the outset since they had no isolation hospital whereto they might send any refractory patient who would, for conscience sake, put a whole countryside in jeopardy. It is proposed to have such a hospital provided before the like can occur again. *The Lancet*, however, offers its suggestion that the authorities plan to build a structure which will meet a wider range of exigencies than that through which they have just passed; the writer in that journal holds the opinion that the small contagious-disease hospitals, thus procured, on the spur of some sudden emergency, are seldom made ready in time for the epidemic responsible for its procurement, and have seldom been found afterwards to properly serve the later requirements of the place. That plan which has served more usefully than any other, according to the writer of the comments in the journal, has been the rapid fitting out of a small house-hospital which is hired for the occasion; this is preëminently the fact regarding outbreaks of small-pox, where so much can fortunately be accomplished by vaccination.

EDITORIAL NOTES.

HOME.

Michigan State Medical Society.—The twenty-fifth annual meeting of this prominent organization will be held in the city of Grand Rapids on the 19th and 20th of June next, the date having been changed to avoid conflict with that of the American Medical Association. It is one of the representative organizations in this country, and the adjacent States will do well to be officially represented by delegates in that as-

semblage. The President's Address will be delivered by Dr. George E. Frothingham, of Detroit. Subject—"The Need of Extensive Organization and pursuit of a Fixed Policy as a Means of promoting our Professional Interests."

Tennessee State Medical Society.—The fifty-seventh annual session of the Tennessee State Medical Society will he held at Memphis, April 8, 9, and 10, at the Gayoso Hotel.

The North Philadelphia Hospital has been incorporated. It will probably be enabled to begin operations within the current month, with six beds at the outset. A large building of fifteen rooms, on North Broad street, will be immediately prepared for occupancy.

Dr. S. Wier Mitchell, of Philadelphia, is the author of a dramatic poem, entitled "The Masque," which was publicly rendered and favorably received, on March 8, at a theatre in Philadelphia.

The New York Hospital is about to add a solarium to its other appliances for the benefit of its convalescents.

The New York Eye and Ear Infirmary laid the cornerstone of its new building, on Second avenue, on March 15, in the presence of a notable body of clergy and citizens of public spirit. Ex-Mayor Hewitt was called to the chair, in the absence of Mr. Chauncey M. Depew, who was reported sick with influenza. This institution is seventy years old and has an endowment fund of a quarter-million of dollars. The new building will cost $100,000, towards which $70,000 have been subscribed and $30,000 must be looked for from private sources. The staff consists of forty-six surgeons, who minister to the needs of nearly 20,000 patients annually.

Mississippi State Medical Association.—The next annual session of the Mississippi State Medical Association will be held in Jackson on April 16.

Florida State Medical Association.—At a meeting of the Executive Committee of the Florida Medical Association, held in Jacksonville, February 20, it was decided to change the place of the annual meeting from Key West to Ocala. This was deemed best after consultation with the President of the State Board of Health, lest quarantine regulations might interfere with the meeting at Key West. The meeting will be held in Ocala on April 8, the session being opened in the Opera House at 3 P. M.

Lectures on Hygiene and Public Health.—By invitation of the trustees of the Mott Memorial Library, Dr. Alfred L. Carroll is to deliver to physicians and students a free course of fifteen lectures on hygiene and public health, during April and May, at 4 o'clock P. M. on Mondays, Wednesdays and Fridays, at the Mott Hall, 64 Madison avenue, New York City.

Western Pennsylvania Medical College.—The fourth annual commencement exercises of the Western Pennsylvania Medical College were held in the Grand Opera House, Pittsburg, on March 27. The degree of M.D. was conferred on twenty-nine graduates, being about 25 per cent. of the class in attendance during the past term. In the evening of the same day the Alumni Association of the college, now numbering 120, was entertained by the faculty at a banquet provided at the Seventh Avenue Hotel.

FOREIGN.

The Extension of Epidemic Influenza East and West.—The advance of epidemic influenza into Persia has been reported as far eastward as Teheran, at which place as many as seventy deaths in a day have been credited to that disease. Several members of the Shah's family have been among the sick.

The epidemic has extended into Mexico, and has been raging with great virulence in the State of Hidalgo.

Dr. Hans Meyer, of Berlin, is one of a party of two Germans, who have made the ascent of the marvelous peak of Kilimanjaro in East Africa. The report is that they were the first to have ascended to the very summit, seventeen days being the time devoted to the ascent and an exploration of three of the highest points. The aneroid indicated 19,690 feet elevation at the summit.

The Oldest Freemason in the World is said to be Dr. William Salmon, of England, whose age is over one hundred years.

The Influenza has recently appeared in the Bermuda Islands.

TOPICS OF THE WEEK.

REPORT ON SANITARY REGULATIONS OF THE PAN-AMERICAN CONGRESS.

The Committee on Sanitary Regulations of the Pan-American Congress has made a unanimous report in which it condemns absolute isolation in preventing the spread of epidemics, and recommends in its stead the disinfection of all articles from infected localities before they are permitted to be imported into healthy places. The following propositions have been adopted by the Congress, on recommendation of the committee :

"That, taking the existing state of the relations between the nations of America, it is as practicable as it is advisable, for the promotion of these relations, to establish perfect accord with respect to sanitary regulations.

"That the greater part of the ports of South America on the Atlantic are guided and governed by the decisions of the International Sanitary Convention of Rio Janeiro of 1887.

"That although it does not appear that the plans of the Sanitary Congress of Lima, of 1889, have passed into the category of international compacts, it is to be hoped that they will be accepted by the governments that participated in the said Congress, because those plans were discussed and approved by medical men of acknowledged ability.

"That the Sanitary Convention of Rio Janeiro of 1887, and the draft of the Congress of Lima of 1889, agree in their essential provisions to such an extent that it may be said they constitute one set of rules and regulations.

"That if these were duly observed in all America they would prevent under any circumstances the conflict which usually arises between the obligation to care for the public health and the principle of freedom of communication between countries.

"That the nations of Central and North America were not represented either in the Sanitary Convention of Rio Janeiro or the Congress of Lima, but that they might easily accept and apply to their respective ports on both oceans the sanitary regulations before cited."—*Sanitary News.*

CHEMISTRY AND ITS RELATION TO MEDICINE.

Among the remarkable developments of medical science in recent years is the important position assigned to chemical discoveries and theories, and their relation to practical medicine. For many years the aphorism of Boerhaave, "*Chymia egregia ancilla medicinæ, non alia pejor domina,*" defined the position chemistry ought to hold in its relationship towards scientific medicine—an aphorism which in more recent times has received point and force from the ridicule cast upon chemical theories by the teaching of Graves and Trousseau. Now, however, chemistry promises to play once more a dominant part in the medical theories and speculations of the day, and, under more competent guidance than was possible when the aphorism was originally launched against the iatro-chemists of the seventeenth century, will, it is to be hoped, avoid the errors of the past, and solve many important problems urgently requiring elucidation. As evidence of this reaction in favor of chemical speculation we need only point to the chemical investigations being carried on at the present time in physiology, pathology, pharmacology, and in clinical medicine, and to the large sums expended in almost every school on increased laboratory accommodation, to say nothing of the new laboratories constructed on the Embankment at great expense by the Conjoint Board of the Royal Colleges of Physicians and Surgeons, and which will shortly be opened for original research. With this resumption of activity in the domain of medical science, the teaching of elementary chemistry assumes an importance not hitherto accorded it. For a sound and efficient training in the principles of both physics and chemistry will be an essential equipment of the student of the future if he is to understand the facts that chemical research has to put before him throughout his professional career. These remarks have seemed necessary, since there is, we believe, a disposition to relegate the teaching of elementary chemistry to a more inferior position than it even now holds in the medical curriculum. Such a step would be disastrous, and would be utterly retrograde. For if, during the many years that chemistry was but little regarded as an auxiliary to medicine, it formed one of the essential features of our examinations, now that a more extended knowledge of the subject is required for the new departure chemistry has taken as applied to medicine, it would be absurd to reduce the elementary teaching to what a sixth form boy could pick up during his last half-year at school.—*The Lancet.*

THE MEDICAL LIBRARY OF THE UNIVERSITY OF PENNSYLVANIA.

The medical library of the University of Pennsylvania is said to be growing very rapidly, having received numerous gifts of books and money. The two principal donors are Dr. Alfred Stillé, who presented a collection of books, numbering 3,000 bound volumes and 5,000 unbound volumes and pamphlets, and Dr. William Pepper, who more recently gave the greater portion of his own medical library; $15,000 in money has also been received, one-half of which has been expended in the erection of the new library building, while the other half is to be retained as the nucleus of an endowment fund for the purchase of books and medical journals.—*Medical Record.*

M. PASTEUR AND THE RABBIT PEST IN AUSTRALIA.

In respect to a statement alleging that the Australian Government had refused to allow M. Pasteur the reward of £20,000 offered to the person who should suggest the best plan for the destruction of the rabbits that infest that colony, M. Pasteur is reported to have said that this was not so, for the simple reason that he had never sought it, and that, owing to circumstances over which he had no control, he could not claim such a reward. He had sent M. Loir, his nephew, and another of his assistants to Australia in order to try the experiments which he had made in his laboratory on a more extended scale. The assistants returned to France after a few months, discouraged. According to M. Pasteur, they

were not allowed by the Commission appointed by the Australian Government to make any important experiments. This Commission permitted the assistants to inoculate a few rabbits, and the experiments were successful enough to warrant a further extension of the authorization; but all sorts of delays and adjournments were caused, until the assistants abandoned all hope of being able to carry out the purpose for which they had undertaken the voyage to Australia.

A BILL TO REGULATE MEDICAL PRACTICE IN RHODE ISLAND.

A Bill with the above title is now before the Legislature of that State. The first section of the act provides that only registered physicians shall be allowed to practise medicine in this State, and section 2 is as follows: "Every person in order to be a registered physician within the meaning of this act shall be either a graduate in medicine or a practising physician. Graduates in medicine shall be such as have obtained a diploma from a regularly incorporated school or college of medicine, and shall have presented to the State Board of Medicine satisfactory evidence of their qualifications. A practising physician shall be deemed to be a person, who for the ——— years next preceding the passage of this act has continuously practised medicine in this State, and who shall have presented to the State Board of Medicine satisfactory evidence of his qualifications, and any other person who shall have presented to the State Board of Medicine satisfactory evidence of his qualifications to practise medicine."

A PARADISE FOR STRONG-MINDED WOMEN.

Ladies ambitious of academical distinction should betake themselves to Belgium, where Napoleon's maxim, *La carrière ouverte aux talens*, without invidious distinction of sex, has now received the sanction of the Legislature. On January 30 the Chamber of Representatives, acting in concert with the Ministry, passed an enactment that henceforth all university lectures and courses of instruction, together with all academical degrees, shall be open to women. Moreover, whereas they have hitherto only been allowed to practise certain branches of the healing art, both medicine and pharmacy are now thrown open to them without restriction. It is not clear why legislators of such advanced views should have expressly protected the legal profession from the intrusion of forensic-minded ladies, but this incousistency may not be altogether unconnected with the fact that the majority of the members of the Chamber of Representatives are lawyers. Nothing is said as to the Church, but if women may become Doctors—that is, teachers—of Divinity, it would be unfair to exclude them from the pulpit.

RECENT SAVING OF LIFE IN MICHIGAN.

In a carefully prepared paper, read about the Sanitary Convention at Vicksburg, the proceedings of which are just published, Dr. Baker gave official statistics and evidence which he summarized as follows:

"The record of the great saving of human life and health in Michigan in recent years is one to which, it seems to me, the State and local boards of health in Michigan can justly 'point with pride.' It is a record of the saving of over one hundred lives per year from small-pox, four hundred lives per year saved from death by scarlet fever, and nearly six hundred lives per year saved from death by diphtheria—an aggregate of eleven hundred lives per year, or three lives per day, saved from these three diseases! This is a record which we ask to have examined, and which we are willing to have compared with that of the man who 'made two blades of grass grow where only one grew before.'"—*American Practitioner and News.*

STATISTICS OF BREATHING.

In each respiration an adult inhales one pint of air.

A man respires sixteen to twenty times a minute, or twenty thousand times a day; a child twenty-five to thirty-five times a minute.

While standing, the adult respiration is twenty-two; while lying, thirteen.

The superficial surface of the lungs, *i. e.*, of their alveolar space, is two hundred square yards.

The amount of air inspired in twenty-four hours is ten thousand litres (about ten thousand quarts).

The amount of oxygen absorbed in twenty-four hours is five hundred litres (744 grams); and the amount of carbonic acid gas expired in the same time, four hundred litres (911.5 grams).

Two-thirds of the oxygen absorbed in twenty-four hours is absorbed during the night hours from 6 P. M. to 6 A. M.

Three-fifths of the total carbonic acid is thrown off in the day time.

The pulmonary surface gives off one hundred and fifty grams of water daily in the state of vapor.

An adult must have at least three hundred and sixty litres of air an hour.

The heart sends through the lungs eight hundred litres of blood hourly, and twenty thousand litres, or five thousand gallons, daily. The duration of inspiration is five-twelfths, of expiration seven-twelfths, of the whole respiratory act; but during sleep inspiration occupies ten-twelfths of the respiratory period.—*Annals of Hygiene.*

THE INSCRIPTION ON THE CORNER-STONE OF THE PENNSYLVANIA HOSPITAL.

The corner-stone of the Pennsylvania Hospital was recently uncovered, and the inscription was found well preserved in clear and sharply-cut letters. It read as follows:

IN THE YEAR OF CHRIST
MDCCLV
GEORGE THE SECOND HAPPILY REIGNING
(FOR HE SOUGHT THE HAPPINESS OF HIS PEOPLE)
PHILADELPHIA FLOURISHING
THIS BUILDING
BY THE BOUNTY OF THE GOVERNMENT
AND OF MANY PRIVATE PEOPLE
WAS PIOUSLY FOUNDED
FOR THE RELIEF OF THE SICK AND MISERABLE
MAY THE GOD OF MERCY
BLESS THE UNDERTAKING

PRACTICAL NOTES.

RESORCIN IN WHOOPING COUGH.

This remedy seems to be gaining ground in the treatment of pertussis. In a late number of the London *Lancet* it is stated that Dr. Justus Andeer, who had previously written in recommendation of the employment of resorcin in whooping cough, has recently published some fresh cases illustrating, as he believes, the advantage of this method of treatment. One of the patients was his own child, a little girl of 7 years of age, who during an epidemic of measles and whooping cough was attacked by the catarrhal form of the latter affection and suffered severely for a week, notwithstanding a change of climate. He then prescribed an ounce of a 2 per cent. solution of resorcin four times a day, part of which solution the child was to gargle, and part of which she was to take. This very soon began to show signs of affecting the course of the disease, for on the second day the fits of coughing very perceptibly diminished, and in eight or ten days the child was quite free from coughing. Five other children, who had been unsuccessfully treated for some time, immediately began to improve under the resorcin treatment. In the case of a baby of 6 months old a sweetened solution of the strength of ½ per cent. was given by means of a feeding-bottle and answered admirably.—*Cincinnati Med. Journ.*

CHLOROFORM WATER IN CROUP.

Dr. H. B. Bashere has lately obtained excellent results from chloroform water in the treatment of false croup, and regards it as superior to chloral in this affection, in that it is not so dangerous and is eliminated in part by the lungs. Of course its action is local, and its value, probably, due to the sedative effect upon the sensory filaments of the superior laryngeal nerve. He makes use of a solution consisting of 5 to 10 minims of chloroform to an ounce of water, to which is added a little glycerine to aid the solubility of the chloroform. A teaspoonful of this is given every half hour during an attack, and if there is any dyspnœa the following day, a teaspoonful is given every two hours, increased in frequency to every hour during the evening. This method of treatment is especially applicable to those cases in which the dyspnœa and cough continue during the day.—*Medical Record.*

TURPENTINE IN POST-PARTUM HÆMORRHAGE.

"For a number of years," writes a correspondent, "I have used spirits of turpentine in post-partum hæmorrhage, and in every case with the best results. When the ordinary means, that is, friction over the uterus, irritation of the uterus by introduction of the fingers, cold hypodermic injection of ergotine, etc., failed, by saturating a piece of lint with the turpentine, and introducing it with my hand into the uterus and holding it against the walls, rapid contraction took place, and all hæmorrhage instantly ceased. In one or two cases, when the patient was almost pulseless, it seemed to act as a stimulant. On no occasion did its action fail, nor did it cause the slightest inconvenience, except in one, when the side of the patient's thigh was slightly blistered by some that came in contact with it, but it gave very little annoyance. I consider it to be much quicker and safer in its action than any other remedy; it does not cause any injurious result, and besides it is much more easily applied. In country practice, getting hot water or using injections often entails loss of valuable time.—*Lancet.*

A NEW TEST FOR ALBUMIN IN URINE.

Dr. D. Meredith Reese reports in the February issue of the Johns Hopkins Hospital Bulletin on a test series of over eighty cases in the course of an investigation as to the applicability of trichloracetic acid as a test for albumen in the urine. This test is a new one, the first prominent mention that was made of it in English literature being that made in the *British Medical Journal* for November 16, 1889. The reagent may be used either as a solid or as a liquid. According to Dr. Reese, the tests by this substance for albumen in urine were most delicate, the reaction is prompt, the manipulation is not difficult, and no discoloration or colored zone is produced in the specimens.

SALICYLATE OF SODA PER RECTUM.

Dr. Stein, of Saaz, mentions in a Prague medical journal that, having a case of rheumatic fever of a severe and very obstinate nature in a lady with a very sensitive stomach, which refused to tolerate medication of any kind when administered by the mouth, he was able to treat the case satisfactorily by enemata of salicylate of soda. He gave three enemata daily, each containing from 30 to 45 grains of the salicylate. The quantity of liquid used for each was about 8 ounces.

CARBUNCLE TREATMENT.

Drs. Arnozan, Lande and Maurange inject into the cellular tissue of the inflamed peripheric zone 5 grams of a solution composed as follows: Glycerine and distilled water, of each 15 grams; crystallized carbolic acid, 3 grams. The injections were made at five different points around the inflamed region, and represent a dose of 50 centigrams of carbolic acid. Amelioration of the local and general state was prompt, and in twenty-four hours probability of a cure was manifest.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, January 22, 1890.

The President, W. W. Keen, M.D., in the Chair.

Dr. H. A. Hare read a paper entitled

DEMONSTRATION OF THE EFFECT OF THE ENTRANCE OF AIR INTO THE VEINS.

Some months ago I published an account of experiments on seventy dogs, in which I found that the entrance of air into the veins of living animals was not so lethal as is generally believed. It has been taught that minute globules of air entering the veins will produce fatal results, or, at least, most serious symptoms. The way in which I discovered the fallacy of this was by making injections of solutions of drugs. I found that when a small quantity of air was introduced accidentally, no evil effects resulted. On looking up the literature of the subject I found that the mass of evidence was really against the common belief. There are quite a number of cases on record where patients have died suddenly during operation, and death was attributed to the entrance of air.

In order to be brief, I shall read an abstract from my paper:

"One of the most thorough studies of the subject so far published is undoubtedly that of Wattmann, from whom most of the following information is derived, unless otherwise stated. The first experiments of this kind are attributed to Wepfer, who is said to have killed an ox of stupendous size by blowing air with his mouth into its jugular vein; while Redi, in a letter to Steno, written over two hundred years ago, stated that he had killed in a similar manner two dogs, a horse, a sheep, and two foxes. Similar studies have also been made by Heyde and Brunner. Ruysch, Valsalva, Morgagni, and others, have at autopsies recorded the appearance of quantities of gaseous fluid in the vascular system, which they believed to be air. Very much later, Bichat made startling announcements as to the small amount of air required to cause death when so introduced, but Nysten, a few years later, showed the fallacies in Bichat's assertions.

"In 1818, a patient of Beauchene, at the Hôpital Saint Antoine, while he was extirpating a tumor of the right shoulder and lateral and lower part of the neck, died very suddenly, 'under circumstances which made him believe that this was occasioned by entrance of air into the vascular system through an opening in a vein.' Further cases have since been reported by writers in this country, and abroad by Amussat, Mott, and others.

"The paper of Amussat is one of the most exhaustive of its kind, but its conclusions were vehemently attacked by men no less noted than Velpeau, Gerdy, Blandin and Malle, all of whom asserted that the symptoms detailed were not to be thought due to the entrance of air, but to other extraneous causes.

"In the experiments of nearly all the early investigators, the air was introduced by blowing with the mouth or a syringe, but Amussat carried out a series of studies in which he opened the jugular vein and allowed any air to enter that could do so.

"The experiments of Nysten proved that only large amounts of air produce fatal results, the quantity varying from 40 to 120 cubic centimetres, according to the size of the dog, and he also found that larger amounts must be used to kill the ox or horse.

"Magendie states that he has thrown, with all the force and celerity of which he was capable, forty or fifty pints of air into the veins of a very old horse without his dying immediately, and Cormack blew the contents of his chest, twice filled, into the jugular vein of a horse before the animal exhibited any signs of uneasiness. Barthelemy has also found that in six horses, weakened greatly by the withdrawal of blood, as much as from four to six litres of air must be introduced intravenously to cause death, and estimates, in consequence, that a man weighing 136 pounds would be killed only by two-thirds of a litre. Even the experiments of Amussat force him to the conclusion that a considerable quantity of air must be used to cause death. Ore finds 80 ccm. necessary to cause death in the dog.

"The conclusions to be reached, therefore, from all experimental researches is that enormous amounts of air must enter a vein to cause death, and that no such quantity can possibly find its way into a vein which has been injured with the knife of the surgeon. These are the facts against the prevailing idea; let us see what the facts are for it. The answer is that there are none. While we have a large number of cases reported of sudden death under operations where veins were opened, in the majority of them the cause of death has been guessed at, and not proved. The only case which approaches in any way toward authenticity is that of Mott, who saw a serious but not fatal result induced by the entrance of air into the facial vein, and even this is not a proved case. The case of Barlow is equally doubtful as to the real cause of death.

"There are a number of cases on record where death has resulted, according to the physician in charge, from the entrance of air into the uterine sinuses.

"Supposing that ordinary atmospheric air is really capable of acting in the manner generally thought, the question arises as to the method of its influence. Erichsen believes it to be due to

the frothy state of the blood, which prevents the due transfer of the circulating fluids through the pulmonary tissue, and Bell believed death to be due to the transference of air to the base of the brain.

"Cormack has thought death to be due to gaseous distention of the heart, and Moore thought it to be due to the entrance of air into the cardiac cavities. Other observers have found air in the right heart, and concluded that in this way the blood is prevented from eventually getting to the lungs and general system. Again, it has been thought that the air prevents the closure of the valves of the heart, or that the bubbles of air entering the smaller capillaries acted as emboli.

"Taking up the last theory first, we find, in the first place, there is no evidence whatever to prove that air may not be driven anywhere that blood can flow; and it is, to say the least, curious that any one should suppose that a bubble of air, which is compressible in itself, and capable of assuming any form under pressure, should form an impassable barrier against which a blood-pressure of 200 millimetres could press in vain—a pressure made up of blood, a virtually incompressible body. This seems to be sufficient evidence of the falsity of any such theory.

"Again, why should the air in the cavities of the heart prevent the valves from closing? We are accustomed to test the tightness of rubber bags by inflating them with air or water, and if the valves can close on a current of blood, why can they not do so upon a current of blood and air mixed? If the air was as heavy as mercury, and as difficult of propulsion, such a theory might stand.

"Even the theories of the causes of the supposed deaths in man do not, therefore, stand before a rigid examination, which is hardly to be wondered at when we have proved that the quantity of air entering the veins under such circumstances cannot be of any great quantity.

"According to Ashhurst and Agnew, the veins of the neck are the ones most liable to be entered by air, and it is said by Agnew that the frequency of this accident is due to the fact that the venous trunks in that region are in many places attached to the deep fascia, which prevents collapse of their walls when wounded; for this reason this part of the body is spoken of as the 'dangerous region,' according to Ashhurst.

"The explanation of the method by which the air finds entrance to the veins is supposed to be a process of suction produced by the expansile movements of the chest in inspiration. Practically, most surgeons will agree with me in stating that generally the blood pressure in the jugular vein is sufficient to cause so great a hæmorrhage as to prevent any air entering the vein; and I have proved the fallacy of the suction theory any number of times by leaving an open canula in the jugular vein, the vessel being tied above to prevent hæmorrhage."

Two dogs were then taken, and into the external jugular vein of one was injected twenty cubic centimetres of air, and into the jugular vein of the other forty cubic centimetres. The animals were subsequently released, and showed no apparent bad effects.

The President: The Chairman of the Board of Directors wrote to a number of prominent surgeons asking them to take part in this discussion, but I think, without exception, they replied that they had had no experience with this accident. It has never happened to me to wound a large vein, and have any symptoms which would lead me to think that air had entered a vein. There are, however, a number of statements as to this matter which we must take as the statements of careful observers and operators. We must also bear in mind the important paper of Senn, of Milwaukee, presented at the meeting of the American Surgical Association, in 1885. His conclusions are somewhat at variance with the experiments of Dr. Hare.

I have always supposed, and taught in my surgical lectures, that the entrance of air into veins was a danger, and have explained it in this way: The air entering the vein and passing to the small vessels of the lungs, is churned into a froth, the little bubbles thus formed constitute aerial emboli, which have a considerable amount of adhesion to the blood-vessel walls. We can understand this by an ordinary observation on a summer's day. If we have a glass of cool water, we know that small bubbles of air accumulate at the sides of the glass in consequence of the heat, and these are often dislodged with some difficulty. I can, therefore, easily conceive how, in a blood-vessel of very small calibre, the bubble of air would form an aerial embolus which, adhering by its entire periphery, would not be displaced even by the two hundred millimetres of blood pressure. Several surgeons have had cases in which, as a fact, sudden death has occurred with a lapping or gurgling sound, apparently from the entrance of air, the patient rapidly becoming asphyxiated, and at the post-mortem there has been found frothy blood in the heart and pulmonary capillaries. It is hard to maintain that the entrance of air is not dangerous in the face of such observed facts. On the other hand, one is staggered when he sees twenty and forty cubic centimetres of air injected directly into the veins of a small dog, and he cannot conceive how this will have a different effect in different animals, except in so far as the blood pressure is different.

Dr. A. J. Downes: From a few experiments on animals, for a different purpose, however, I have thought that there may be an apparent fallacy in these experiments. The danger from the entrance of air is an immediate one. When a

vein is wounded the on-flow of the blood-current, which is considerable in the jugulars, naturally carries air into the veins under different conditions than exist in the experiment. Here, owing to technical manipulations, the venous flow is at least passive. Then, too, nerve influence may be a potent factor. The suddenness of its entrance, not the quantity, of air may have some effect upon the heart ganglia.

DOMESTIC CORRESPONDENCE.

Some Ill Effects of Disinfection with Sulphur.

To the Editor:—In your editorial in The Journal of Feb. 8, 1890, entitled, "Correct Official Instructions as to Disinfection with Sulphur," you say: "there may possibly result from it some bleaching of colored articles when the sulphur dioxide comes in contact with wetted goods and there may be some minor damage beside."

This statement is eminently correct, and while such damage is not considered as weighing against the disinfection, where necessary; it is well to know that sulphur burnt in the presence of moisture may have the following undesirable effects:

1. It injures the colors of many woolen goods, being especially hard on greens and bright reds—a red flannel shirt, for instance, always comes out yellow, sometimes the color is not affected; the dark blues are generally absolutely uninjured, but not rarely turned a reddish brown. The same color of course may be from very different dyes and thus give different results. The quality of the dye, as judged by the price of the fabric, is no criterion of how it will behave under sulphur. Clothes that have been worn are frequently discolored, when new ones, of the same nature, from the slop chest are but little or not at all affected, doubtless protected by the oil used in weaving, which has not worn off.

I have seen but few colored goods, other than woolens, submitted to SO_2, in some instances they were bleached.

2. Articles containing starch, if not washed soon, are corroded—especially true of handkerchiefs, etc., and the cloth covers of books.

3. Blankets and hair pillows—which are utterly unsuited to the process—will retain for about a week a smell so disagreeable, in no sense like that of burning sulphur, that they are unpleasant to use. This persists in spite of airing and exposure to the sun, but is immediately removed by washing, or heating in an oven.

4. Flour in ordinary barrels will not "rise" with yeast for some days after exposure, and this effect penetrates for a considerable distance in the barrel.

Tea is ruined permanently, as is ground coffee. The same charge is made of its effect on smoking tobacco, but not using it I can only give the testimony of others.

It is hardly worth while to mention the tarnishing of metal-work—all save gold—or the consequent injury to watches, clocks, etc. Oil prevents this almost entirely. Apples and other fruit become scalded and worthless.

The gas in the above observations was obtained by burning as much sulphur as possible in the presence of abundant moisture in a compartment more or less close, kept closed for from twenty-four to forty-eight and occasionally seventy-two hours. In general it was not possible to enter the compartment for some time—thirty minutes to an hour—after opening up. Where the apartment is more open less injury would be done and also less efficient disinfection.

I can say that these observations are sufficiently numerous to be reliable, and are what I have personally seen during actual disinfection.

If this note will enable any health officer to avoid a loss which he would otherwise cause, and presumably pay for, the purpose for which it is written will be fulfilled. Very truly,

H. R. Carter, M.D.,
(U. S. Marine-Hospital Service.)
North Chandeleur Island, March 10, 1890.

NECROLOGY.

H. M. McKay, M.D.

Dr. H. M. McKay, of Woodstock, Ont., has died. He was formerly a President of the Medical Association of his Province, and at the time of his decease a member of the Ontario Board of Health. He was a representative man in the best sense of the word, and much sought after by reason of his natural powers and his excellent experience and judgment.

George T. Trezevant, M.D.

Dr. George T. Trezevant died at Abilene, Tex., on February 7, 1890, after an illness of ten days resulting from an attack of la grippe. Dr. Trezevant was born in 1846 in Hines Co., Miss., whence he removed in 1852 to Madison Parish, La. At the age of 16 he entered the Confederate Army, in which he served until the close of the war, when he began the study of medicine, graduating in New Orleans in 1869. Engaging at once in his profession at his home, he soon enjoyed a large and lucrative practice, but in 1875, being forced by ill health to leave his home, he decided to resume practice in Abilene, Tex., where he

soon became known as a popular and successful practitioner. As a physician he stood among the first; as a man he was bold and fearless in the discharge of his duty. He was indeed the true type of a Southern gentleman. While living in Louisiana he filled several offices of trust with honor to himself and to his parish. He was a member of the American Medical Association. An aged mother, a wife, four children and a brother, together with hosts of friends, mourn his loss.

BOOK REVIEWS.

THROUGH THE IVORY GATE. STUDIES IN PSYCHOLOGY AND HISTORY.—By WILLIAM W. IRELAND, M.D., Edinb.; formerly of H. M. Indian Army; Corres. Memb. of the Psychiatric Soc., St. Petersburg, and of the N. Y. Medico-Legal Soc.; author of "The Blot Upon the Brain." Pp. vii, 311. New York: G. P. Putnam's Sons. Edinburgh: Bell & Bradfute. 1889.

The title of this work has reference to the classical allusions of Homer and Virgil to spectres which walked through the ivory gate. It contains extremely interesting accounts of the lives of several famous and infamous persons, all of whom the author believes to have been the victims of "spectres." The individuals under consideration are Emanuel Swedenborg, William Blake, Louis II of Bavaria, Chas. J. Guiteau, Louis Riel, Gabriel Malagrida, and Thebaw, King of Burmah. The author's graphic descriptions of the character and lives of these insane persons, as he believes them to have been, furnish most interesting and valuable descriptions of some phases of insanity.

GYNECOLOGICAL ELECTRO-THERAPEUTICS. By HORATIO R. BIGELOW, M.D.; Permanent Member of the American Medical Association; Fellow of the British Gynecological Society; Member of the Anthropological and Biological Societies of Washington, D. C. With an introduction by Dr. Georges Apostoli. With illustrations. Philadelphia: J. B. Lippincott. 1889.

This book is an attempt to record what the author has seen and what others have done. His association with Dr. Apostoli has given the impetus which was necessary to inaugurate such a work. In speaking of his master, Apostoli, the author says: "His name will ever be indissolubly linked with gynecological electro-therapeutics. Many of the ablest men of to-day carry with them the delightful souvenirs of individual contact with one who was always courteous, obliging and honest; who is as free from the dross of life as a man can be, and whose extensive observation, patient investigation and research are sources of wonder. I have had the free use of his clinic, of his records, of his library and instruments, since October, 1888, and during the days of treatment in the Rue de Jour I have been in contact with medical men from all parts of the world. They know that whereof I write is true."

Dr. Bigelow speaks from a full experience. His first chapters are taken up with the fundamentals of electricity. His subsequent chapters are compilations from recognized authorities on his subject everywhere—Spencer Wells, Thomas and Skene Keith, Webb, Playfair, of England; of Mundé, Engleman, Grandin, Rockwell, Kimball, Massey, Laphorn Smith and Martin, of America.

Of the class of cases in which the electric treatment stands us in good stead the author specifies:

Fibroid tumors of the uterus.
Hypertrophy of the uterus.
Non-suppurative salpingitis.
Metritis.
Endometritis.
Subinvolution, superinvolution.
Disorders of menstruation.
Ovarian pain.
Chronic oöphoritis.
Periuterine inflammation.
Displacements.
Hæmatocele.
Some hystero-neuroses.
Steuosis of the cervical canal.
Erosions of the cervix.
Nausea of pregnancy.

The introduction to the work by Dr. Georges Apostoli is not the least interesting chapter of the work.

The book is well worth the perusal of mad operators.

ARTIFICIAL ANÆSTHESIA. A Manual of Anæsthetic Agents and their Employment in the Treatment of Disease. By LAURENCE TURNBULL, M.D., Ph.G., Aural Surgeon to Jefferson College Hospital, Philadelphia; late Honorary President of the Otological Sub-section of the British Medical Association, etc. With illustrations. Philadelphia: P. Blakiston, Son & Co. 1890.

The third edition of this valuable manual, revised and enlarged, is just issued from the publishing house of P. Blakiston, Son & Co. A thorough revision of his former work is here presented by the author. The various anæsthetics, local and general, are fully described, and the recorded observations of a large number of physicians experienced in their administration are embodied in the text. The indications for their use are fully described, the cautions to be observed in their administration are properly set forth, and the means to be used to prevent un-

toward results are explicitly stated. The closing chapter upon "The Medico-Legal Relations of Anæsthetics" will well repay the cost of the work.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Vol. 4. No. 1. October, 1889. Published Monthly, $10 a year; single copies, $1. New York: Wm. Wood & Co.

The October number contains short essays by John Brown, M.D., of Glasgow, on "The Influence of the Male Element upon the Female Organism," and by A. Symons Eccles, M.B., on "The Internal and External Temperature of the Human Body as modified by Muscle-Kneading." The remainder of the number is devoted to an extensive and valuable treatise by Thos. Bryant, F.R.C.S., on "The Diseases of the Breast." Mr. Bryant's work is well illustrated by engravings and excellent chromo-lithographs.

The Physician's Leisure Library. EDUCATION AND CULTURE AS RELATED TO THE HEALTH AND DISEASES OF WOMEN. By ALEX. J. C. SKENE, M.D. Detroit, Mich.: Geo. S. Davis, 1889. Pp. 127.

The writer informs us at the outset that "this work originated in a desire to answer a few of the many inquiries made by those who seek medical counsel regarding the care and education of the young." Dealing as it does with a medico-society subject and giving the author's reply to the oft repeated questions of his patients it will naturally find many if not most of its readers outside the medical profession. But to all readers, whether of the medical profession or not, we can warmly recommend this thoughtful and interesting book. We quite agree with Dr. Skene that such teachings as he inculcates cannot be expected and do not come with full force from other than medical men and women and, we may add, they are only useful when emanating from those who have grown wise from much observation and experience.

MISCELLANY.

LETTERS RECEIVED.

Dr. H. T. Reynolds, Baltimore, Md.; Dr. W. H. Wathen, Louisville, Ky.; Dr. Wm. G. Parrish, Burlington, N. J.; Thomas Cook & Son, New York; Dr. A. L. Hummel, Philadelphia; J. H. Chambers & Co., St. Louis, Mo.; Dr. F. E. Kerr, Chattanooga, Tenn.; Dr. S. L. Knapp, Mt. Vernon, Mo.; Dr. R. A. Lancaster, Gainesville, Fla.; Dr. Ephraim Cutter, New York; Dr. A. P. Clarke, Cambridge, Mass.; Dr. J. C. Mulhall, Cincinnati, O.; Dr. R. Stansbury Sutton, Pittsburg, Pa.; Thomas Leeming & Co., New York; Netherlands-American Steam Navigation Co., New York; Dr. F. A. Long, Madison, Neb.; T. E. McArdle, Washington; Free Press Printing Co., Mankato, Minn.; E. Merck, New York; Dr. David Streett, Baltimore, Md.; Dr. A. C. Lamothe Ramsay, St. Cloud, Minn.; Dr. M. A. Olive, Meridian, Tex.; Dr. H. A. Kelso, Paxton, Ill.; Dr. C. C. Hunt, Dixon, Ill.; Dr. J. B. Crowley, Sullivan, Ind.; Dr. P. W. Tomlinson, Wilmington, Del.; Dr. W. R. Townsend, New York; Dr. J. E. Charles, Chicago; Dr. E. A. Snepston, Emory, Tex.; Dr. J. W. Eldred, Chesaning, Mich.; Dr. Clara Marshall, Philadelphia; Dr. C. N. Pierce, Sec'y Woman's Med. College of Pennsylania, Philadelphia; Dr. M. R. Crain, Rutland, Vt.; Dr. J. H. Krause, Plumsteadville, Pa.; The Dixie Doctor, Atlanta, Ga.; Dr. J. W. Green, Shelbyville, Ind.; Dr. Richard J. Dunglison, Philadelphia; Dr. Paul Roach, Quaker St., N. Y.; Dr. J. H. Ludwig, La Porte, Ind.; E. B. Treat, New York; Dr. J. A. Webb, Providence, R. I.; Dr. J. E. Mears, Philadelphia; S. B. Hood, Sparta, Ill.; Dr. F. Glendenning, Lineville, Ia.; G. Mathey, New York; Dr. C. R. Early, Ridgeway, Pa.; Dr. F. H. Bosworth, New York; Dr. John C. Sundberg, San Francisco, Cal.; Dr. W. H. Allport, Dr. A. J. Coey, Chicago; Dr. J. McF. Gaston, Atlanta, Ga.; B. Glick, Kansas City, Mo.; Dr. G. B. Massey, Philadelphia; Dr. A. S. Hamlin, Marysville, Cal.; Dr. J. L. Sargeant, Lodi, Cal.; Dr. A. Clark, Stockton, Cal.; Dr. Thos. Legaré, Charleston, S. C.; Dr. E. M. Shaw, Edna, Tex.; Dr. N. S. Craig, Cedar Rapids, Ia.; Dr. J. H. Van Eman, Kansas City, Mo.; Geo. F. Lasher, Philadelphia; Duryea Jewelry Co., New York; Dr. H. K. Tefft, Topeka, Kan.; Parke, Davis & Co., Detroit, Mich.; Dr. J. B. Mattison, Brooklyn, N. Y.; Dr. James E. Wilson, Philadelphia; Dr. Charles F. Stillman, Chicago; Lea Bros. & Co., Philadelphia; W. P. Cleary, J. Movius & Sons, New York; John Wyeth & Bro., Philadelphia; J. Astier, Paris, France; Scoville & Adams Co., New York; Dr. Alfred C. Haven, Lake Forest, Ill.; Dr. Wm. B. Atkinson, Dr. Solis-Cohen, Philadelphia; Wm. S. Merrill Co., Cincinnati, O.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 22, 1890, to March 28, 1890.

First Lieut. N. S. Jarvis, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of fifteen days. Par. 1, S. O. 34, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., March 20, 1890.

By direction of the Secretary of War, authority is granted for the admission of Capt. Marcus E. Taylor, Asst. Surgeon, to the Army and Navy General Hospital, Hot Springs, Ark., for treatment therein. Par. 6, S. O., A. G. O., March 21, 1890.

Capt. M. E. Taylor, Asst. Surgeon, is granted leave of absence for one month, based on surgeon's certificate of disability, with permission to apply for an extension of one month. Par. 3, S. O. 26, Dept. of the Columbia, March 18, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 29, 1890.

P. A. Surgeon H. E. Ames, ordered to Museum of Hygiene, Washington, D. C.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, from March 3, 1890, to March 24, 1890.

Surgeon W. H. Long, leave of absence extended five days. March 11, 1890.

P. A. Surgeon S. C. Devan, to proceed to Erie, Pa., as inspector. March 12, 1890.

Asst. Surgeon F. C. Heath, to proceed to Cleveland, O., for temporary duty. March 18, 1890.

Asst. Surgeon W. G. Stimpson, commissioned Asst. Surgeon March 11, 1890. Assigned to temporary duty at New York, N. Y. March 13, 1890.

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ORIGINAL ARTICLES.

A STUDY IN DENTAL PATHOLOGY, INCLUDING PITS AND FISSURES OF THE ENAMEL AND INTERGLOBULAR SPACES IN DENTINE.

Read in the Section of Dental and Oral Surgery at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY R. R. ANDREWS, D.D.S.,
OF CAMBRIDGE, MASS.

Mr. President and Gentlemen:—The subject to which I desire to call your attention this morning, "The Pits and Fissures of the Enamel," is one more or less familiar to us. I have been much interested, while studying the development of the teeth, in some of the phases of this form of interruption of the continuity of the enamel cap, and also in the causes which have led to it. Almost all authorities have given these imperfections their attention. Hunter speaks of them as cracks on the hollow parts of the grinding surfaces of the molars, filled with a black substance; and Fox, writing in 1803, describes them as irregularities of the grinding surface of the molars that lead into a cavity in the centre of the tooth. During the progress of the decay it is under this fissure in the internal part of the crown that we find soonest removed, causing the tooth to appear as if the inside had been scooped out. The enamel, being so much harder than the bone, remains, and only breaks away as it loses its support from the bony part becoming dissolved and removed. The chief predisposition to this disease consists in a defective formation of either the enamel or the bony part of the teeth. This original defect in the structure of the teeth, he says, must depend upon a want of healthy action in the pulps during the time of the formation of them. It is impossible for him to conjecture what can be the cause of this imperfection, but he observes that it is very singular and also very certain that the same kind of structure may be observed in the teeth of many individuals in the same family, who in all other respects are very healthy. He furthermore says that the teeth acquire this disposition to decay from some want of healthy action during their formation. This is proven by common observation that these become decayed in pairs—that is, those teeth that are formed at the same time, being in a similar state of imperfection, have not the power to resist the causes of disease. He asserts that in some of the teeth the decay is seen to proceed from the interior to the exterior part. In 1835 William Robertson, of Birmingham, England, published a remarkable work entitled, "A Practical Treatise on the Human Teeth," showing the cause of their destruction and the means of their preservation. In this work he has probably given more attention to the subject of pits and fissures than any other writer since his time, with the possible exception of Magitot and Wedl.

He has examined most attentively these peculiar imperfections, at which each of the several teeth are most liable to the beginnings of decay, and states that it never occurs on clean and smooth surfaces, but, on the contrary, the attack is in all instances made at such points as collect and retain the food, as in the interstices between the teeth, in pits and fissures in the enamel, or at such other points as from any cause whatever retain the particles until fermentation takes place. He denies *in toto* Fox's assertion that in some of the teeth the decay is seen to proceed from the interior to the exterior part. He was the first writer to tell us that all decay is the result of chemical action. He considers the pits and fissures so often found in the enamel, particularly upon the surfaces of the grinding teeth, the principal cause of their destruction. Mr. Robertson claims that it is to this irregularity of structure, so peculiar to the molar teeth, that their greater tendency to decay is to be attributed, and the liability of the teeth in different individuals to decay will be in proportion to the form and depth of these fissures. On the other hand, where there is a close union of the sections of the enamel upon the surface of the teeth, there will be no tendency to decay. The enamel is completed and the secreting membrane removed previously to the tooth appearing above the gum, so that no other change can take place in the structure of this substance, nor can it be affected by any of the constitutional diseases or changes to which the human body is subject. Therefore, the dura-

bility of the teeth or their predisposition to decay will depend upon the state of the constitution at that early period of life when the enamel is being formed. The enamel of the teeth is now universally acknowledged to be an inorganic substance, and can only be acted upon chemically. Therefore, when a tooth has appeared above the gum we can readily ascertain whether it is or is not predisposed to decay by examining the structure of the enamel, and it will be found that the rapidity of the chemical action and the ultimate destruction of the tooth will be in proportion to the form of the fissures that may be found in it, and their capability of retaining more or less of extraneous matter.

Goddard, 1843, speaks of the fissures thus: "The process of decay here is exceedingly insidious, in consequence of the original opening in the enamel maintaining its primitive size until great destruction of the ivory has taken place beneath it, when it suddenly breaks in, and a large cavity is found where a few hours before none was suspected."

Kelly, 1843, tells us that decay commences in the body of the tooth, the enamel being nearly entire. In this case it commences in the bone (dentine) of the tooth, directly beneath the enamel, and is therefore called internal decay. It is not, however, always produced by internal or constitutional causes. Internal decay is not strongly marked in the molars at all ages. It commences beneath a fissure on the outside of the teeth; a black or blueish spot is at first observed, which increases in proportion to the superficial nature and extent of the disease, till a great part of the outside of the tooth is discolored. In a still greater number of cases the disease takes a direction toward the centre, disorganizes the spongy bone of the tooth, and possibly precludes all hope of its preservation before the enamel even cracks. In a third variety the disease burrows, for a longer or shorter time, so far within the crown of the tooth as to give little or no external indication of its true condition. The bicuspids are liable to similar attacks under their grinding surfaces, and with the same results. The upper incisors occasionally begin decay at a natural, though imperfectly formed, concavity directly in the centre of their inner surfaces; but when the enamel is entire we have reason to believe they never decay at this point. Those who argue that the constitution has but little to do with the teeth suppose that a fissure can always be found over the point where this variety of decay occurs, and hence the only exciting causes are outward and accidental. Allowing this defect to exist, it must be admitted, for it is proof itself, that the constitutional powers were originally unequal to the perfect organization of the teeth, and, consequently, its powers of resisting destructive agents are below the natural standard, which in the teeth are at best lower than in other parts of the system. It is obvious, then, that when any modification of the general health, or any local causes, dispose the teeth to decay, it will be seated where they are least protected on their surfaces in the fissures.

Tomes says that molar (and bicuspid) teeth may present to the naked eye all the appearances of a well developed organ, and yet the enamel may be imperfect, and the imperfection may be in such form as to insure the early loss of the tooth. From the natural depressions which separate the cusps of molar teeth minute but deep fissures may be extended through the enamel to within a short distance of the dentine, and they may become larger as they recede from the surface of the tooth. In most cases which he has examined they have been filled with cementum, or, rather, with that modification of cementum which constitutes Nasmyth's membrane, and very commonly they become the seat of decay. These minute crevices, the existence of which, in many teeth, an ordinary examination would not lead one to suspect, are constantly met with in connection with these forms of defective enamel. Again he says: "In the foremost rank as a predisposing cause to decay must be placed these deep but minute fissures found upon the masticating surfaces of the molars and bicuspids."

Salter, 1875, writes: "The defects in the enamel between the cusps of the molar and bicuspid teeth are very common and very fruitful of destructive disease. The fissures are frequently deep, and at the bottom there exists only a confused, ill-developed enamel that is cracked and porous, affording a most incomplete protection of the dentine from external influence. Depressions on the enamel sometimes occur in unusual positions, giving rise to similar results. Perhaps the most common of these occurs at the back of the superior incisor teeth, and is a pretty sure cause of decay in that situation. These are predisposing causes, practically leaving the surface of the dentine open to the attacks of fluids of the mouth. Where these defects are only superficial, the enamel itself may alone first suffer." Salter shows that the tissue under imperfectly formed enamel is always more or less faulty in structure, and says that this imperfect calcification of dentine is in itself a predisposing cause of decay; that when the calcification globules are imperfectly fused, decay is rapid when once attacked.

Wedl, in speaking of the cracks or fissures in the enamel, says: "These interruptions of continuity are observed very frequently upon the otherwise healthy, sound teeth of young persons. Upon close inspection by means of a lens they are found to be much more numerous than one would suspect at first. In order to obtain a definite idea of the appearance of the enamel cap when it presents fissures or carious spots, it is

advisable to detach the cap by means of a 50 per cent. solution of sulphuric acid. In this way a clear and definite view of the fissures may be obtained. It may readily be shown that when the pigment deposit consequent upon decay is limited to a scarcely perceptible dark brown minute dot upon the masticating surface, it is much more extensive upon the internal or dentinal surface, where it has a roundish or jagged outline. When decay in the groove of a molar tooth is displayed in the form of a very narrow streak containing pigment, the affected portion upon the internal surface of the cap measures a fourth of a millimetre and upwards." Wedl speaks also of finding undermining decay in the substance of the enamel, where the particles of enamel have crumbled away and are detached, leaving a gap or a pit, which increases in extent in the deeper layers of this tissue. I have quite a number of examples of this undermining decay of the enamel in my own collection.

Magitot, 1870, speaks thus of congenital imperfection of structure. "The external imperfections, whose form vary infinitely, consist most commonly of vices of conformation of the enamel layer. These are dark colored, irregular grooves on the masticating faces of the molars and bicuspids, fissures which the finest probe penetrates with difficulty. They approach more or less near the dentine, and sometimes actually reach it and expose it. All their characteristics resemble closely decay of the first degree. They are exclusively due to intrafollicular disturbances of their dentification. Now these disturbances, when they occur, ought necessarily, owing to the law which governs them, to be produced simultaneously and in the same degree in all the teeth which are at the same moment in the process of dentification. This is, in fact, what happens, and here is found the explanation of identical congenital lesions upon homologous teeth, and, consequently, of decay which has the same relative position. It is not, then, surprising to see two molars, for example, or two incisors on opposite sides of the same jaw, presenting the same fissure, the same crevice, the same congenital cavity, and, in consequence, one position, one progress and one identical form of two parallel cases of decay."

Dr. G. V. Black states that "the occurrence of decay in fissures and pits is dependent principally on the opportunity given for fermentations at these points by the depth of the pits and fissures in the several teeth. This," he says, "is modified by the individual predisposition to decay. In the child this may be inferred after having learned the condition of the teeth of the parents. The enamel in this position is very thick and heavy, and the pit or fissure often penetrates it more or less completely, so that the decay apparently does not begin on the outside, but in the depths of the pit, from which it spreads under the strong enamel to a considerable extent, and often penetrates the dentine deeply before giving any sign, especially in children, where the dark color is not present as a warning; it is often shown by an ashy-gray color seen through the enamel. This type of decay appears very soon after the eruption of the teeth; the first to appear in the permanent teeth are usually the first molars. These cavities occur in about 25 per cent. of first molars, or an average of one to every patient who applies for a dental operation." My own experience teaches me to believe that this percentage is considerably under what it should be. Dr. Black's statement that the pits are very often absent in the bicuspids and incisors is not in accord with my experience. I find that they are almost as constantly present in the bicuspids as in the molars.

There are some characteristics in this form of imperfectly developed enamel that have interested me while studying its appearance under the microscope. You are certain to find a tract of imperfectly developed dentine under the fissures, and this I believe to be the original cause of the formation of the fissure itself. Thus, a deep fissure found in a recently erupted tooth is a certain sign of a mass of badly organized and softened dentine within, which may or may not at this time be infected with microörganisms. (See Plate, Fig. 1.) The delicate point of an exploring needle demonstrates that the dentine is nearly or quite exposed. A fissure drill pressed through this apparently enters normal dentine; a little deeper and sometimes considerably deeper drilling reaches the softened and extremely sensitive mass of the poorly organized tissue within. Under the microscope it presents what appears to be a pathological condition, differing from normal dentine inasmuch as the defect consists of masses of globules of various sizes, and the interglobular substance of a much less dense structure everywhere between them. (See Plate, Fig. 2.) The defective tissue is not against the enamel, but is found in the substance of the dentine, between the enamel and the pulp. The larger mass of imperfectly developed dentine is found to be directly under the fissures, (see Plate, Fig. 1,) but traces of this interglobular structure are found in other portions of the dentine, a result probably of a lack of nutrition, when these layers of the dentine were forming.

In studying the development of dentine with the higher powers of the microscope, in tissues which have been decalcified by the action of weak acids, we can see how these globules may have been formed. We find, between what was the fully calcified tissue and the adjacent organic tissue, a peculiar layer, hyaline in its appearance, which has been named calcoglobulin. In an investigation extending over several months, I have

been much interested in studying its formation. The sections which I have prepared, that show this layer best, are cross sections of forming teeth, at a period when calcification is commencing, or perhaps better, on the edge of a calcifying dentine germ at any stage before the tooth is wholly formed. The peculiar globular formations, next the formed layer of dentine, show best in tissue that has been in the decalcifying acid for two or three days only.

A brief description of the experiments of Prof. Harting and Mr. Rainie, showing the peculiar action of some of the salts of lime in albumen, may be of interest to us at this point; for they claim by these experiments to have found the explanation of the method of development of teeth, bone and shells. Mr. Rainie found that if carbonate of lime be slowly added to a thick solution of albumen, the resultant salt is in the form of globules laminated in structure like tiny onions; the globules in contact become agglomerated into a single laminated mass, appearing as if the laminæ in immediate apposition were blended with one another. The globular masses, at one time of mulberry-like form, lose the individuality of their constituent smaller globules, and become smoothed down into a single mass. Mr. Rainie suggests, as an explanation of the laminated structure, that the smaller masses have accumulated into concentric layers which have subsequently coalesced, and in the substitution of the globular for the crystalline form in the salt of lime when in contact with albumen, he claims to find a satisfactory explanation of the development of bone, teeth and shells. What he found was really the first stage in the process of the calcification of a tissue.

Prof. Harting has shown that the albumen left behind, after the treatment of these globules with acid, is no longer ordinary albumen. It is profoundly modified, and has become exceedingly resistant to the action of acids, resembling chitine, the substance of which the hard skin of insects consists, rather than any other body. The small onion-shaped globular bodies he has named calcospherites, and the layer caused by the coalescing of these, calcoglobulin, as it appears that the lime is held in some sort of chemical combination; for the last traces of lime are retained very obstinately when calcoglobulin is submitted to the action of acids, in the same manner as does that layer which is found everywhere on the borderland of calcification between the fully calcified and the formative tissue. In the course of my investigation I have found many sections showing the formation of these peculiar globular masses on the edge of forming dentine (see Plate, Figs. 3, 4, 5, 6, 7 and 8). One of my specimens shows the edge of dentine, which is to be covered by enamel, overlaid with small globules. (See Plate, Fig. 4.) These are calcospherites. Those nearest the dentine have become a part of the matrix, showing only a portion of their contour; others near them are spherical, of various sizes, and have a glistening appearance; some are made up apparently of a number of smaller ones. At a point a little above, in the same specimen, this time on the edge of the forming enamel, are seen elongated masses of this substance, made up of many small globules, or calcospherites, which are losing their identity. This section is from a human fœtus in the sixth month. Among many cross sections that I have prepared from the tooth of a calf, at birth, there are some which show these globular formations very beautifully. If we examine another, using a low power, ½ inch, we shall see the band of forming dentine to be about as wide as the layer of odontoblasts just within. The section has been stained with alum carmine, but has taken the stain faintly. Next the dentine, towards the pulp, and apparently among the odontoblasts, are seen, even with this low power, irregular, glistening globular masses. At a point just below where these are seen, the pulp tissue and the odontoblasts have been pulled away from the layer of dentine, with no appearance of globular masses clinging to it. The edge has a glistening appearance, something like the globules mentioned above; under a high power, $\frac{1}{12}$ inch obj., this glistening edge shows rounded contours, as if there had been globules which had become part of the already formed band of dentine. In the substance of some of the odontoblasts, and even in the tissue of the pulp near them, are seen small glistening globules, calcospherites.

In another section the narrow forming band of dentine is seen to be made up mostly of globular masses. (See Plate, Fig. 5.) These are especially bright toward and among the odontoblasts. Nearest the pulp they have the glistening appearance which is seen in fat cells. In still another section these globules are in line and have nearly formed what is to be a new layer of the dentine matrix. They have taken the stain nearly, if not quite as well as the dentine already formed, and commence to look very much like it. In places against the formed dentine some of them have, where they were against it, become a part of it, merging into it, without any line of separation whatever. (See Plate, Figs. 6 and 8.) Smaller globules appear to be imprisoned between them nearest the dentine, and these have a marked granular appearance. The forming layer is, at this very early stage of the formation of the dentine formed, and is also about as wide as the layer of formative cells—the odontoblasts—sometimes, though wrongly, called the membrana eboris. At a later stage, when the calcified layer of dentine is thicker, the layer of calcoglobuliu is much narrower; and while I have never been fortunate enough to observe it forming in this manner, yet indications of globules and globular masses are never difficult to find within the layer of calcoglobulin.

It is somewhat difficult to arrive at exact conclusions in regard to this globular formation of the dentine. My investigation leads me to believe it is the first form that exists, previous to a calcified layer; that is, that small globules coalescing form large ones, and these again coalescing into a perfect layer, form the layer of calcoglobulin which, by complete calcification, forms the dentine matrix or basis substance. While there are seen small glistening bodies, calcospherites, in the pulp tissues near the odontoblasts, it is probable that the ones which form the larger globular masses have, for their source, the odontoblasts. In many places there is an appearance as though the odontoblasts were being enveloped in the larger globular masses that are forming the layer of calcoglobulin and which become, by calcification, the basis substance of the dentine.

In the April number of the *International Dental Journal*, Phila., Prof. W. X. Sudduth, an eminent authority in dental histology, speaking in regard to my published views, says:

"There can be no question that Dr. Andrews is correct in his conclusion that the globular masses seen on the border-land of calcification are of the nature of calcoglobulin, first described by Mr. Rainie, and afterwards brought forward by Mr. Tomes and ourselves, in discussing the subject. There is, however, a further lesson to be learned from the evidence.

"Three questions arise in regard to the nature of the process herein presented, viz.: as to whether the tissue delineated is normal, pathological, or the result of changes that have taken place during the hardening process. If the condition were artificial, as some seem inclined to consider it, then we should expect to find the forming surface of the dentine throughout the entire specimen presenting the same globular appearance, which is not the case, as has been demonstrated by a careful study of the original specimens. In other portions of the sections the forming dentine showed the even, smooth gradation from organic to calcified tissue. This was so throughout all the sections examined." The particular condition, then, is local in character, and we must therefore dismiss the idea of its being the result of post-mortem change.

"As opposed to the theory presented, that it is the normal production of the basis substance, we have to array our own experience and say that in our studies, extending over several years' constant work in embryology, that we have never met so marked a case of globular formation upon the border-land of calcification in any portion of the body as is here delineated. While we have seen a more or less constant tendency upon the part of forming calcified tissues to produce the small bodies denominated calcospherites, and which have also been observed by Messrs. Robin and Magitot in the pulps of developing human teeth, and by Henle in those of the herbivera, yet it has never been our fortune to observe the globular *masses* shown in the slides from which the plate was made.

"This, however, may be said to be only negative testimony, nevertheless in the case in hand such evidence is of the greatest importance in establishing our view of the case, viz.: that it is pathological in character, for a process to be considered normal must be constant in its presentation. The fact that at least one observer has failed to find it so is more or less conclusive evidence that it is not what might be termed a normal or physiological appearance. When we take into consideration that pathological processes are only perverted physiological processes, which may be only one step removed from the normal, it does not necessarily mean any great divergence from the normal process of development. Then again the same argument that was used against the idea of its artificial nature can be here used, seeing that the other portions of the tissues in the same section do not present a similar character. Our interpretation of the phenomena presented in the plate is that through some cause, the nature of which we are unable to explain, there has been a local disturbance in the physiological process and these (microscopically) large globular bodies have resulted.

"Mr. Tomes has described what we take to be similar appearances, and if we understand him correctly, holds the same view with us, when he says 'that globular, spherical forms are constantly to be seen at the edge of the thin cap of forming dentine and may be traced in and around the interglobular spaces.' In another place he says, that 'although these spaces are very common, they are perhaps not to be regarded as perfectly normal, but are rather indications of an arrested development at that spot.'"

It is possible that these appearances are, as Prof. Sudduth has stated, only perverted physiological processes, due perhaps, as I have said to a lack of nutrition or some other cause while the dentine is forming. Yet the fact remains, as Mr. Tomes has stated, that globular spherical forms are constantly to be seen "on the edge of the thin cap of forming dentine." That the globular formations in formed dentine are pathological interruptions in the regular process of development I have no doubt, representing an arrested primary stage. Inherited tendencies, I believe, will cause the dentine to assume this structure. The spaces between the globules are soft like cartilage, and when the mass is pressed with an excavator or other instrument it yields, disturbing large numbers of fibrils that are in the mass, which causes considerable pain. The existence of these interglobular spaces can be regarded with certainty, as a condition predisposing to decay, and when the spaces become infected the decay will neces-

sarily be very rapid. Teeth having these characteristics are usually larger than teeth of the ordinary size. Their faces are rough and irregular with protuberances, rising not only from the grinding faces of the bicuspids and molars, but often from their sides with deep fissures between them. Their color is usually a muddy white. The palatine surfaces of the incisors and cuspids also have these fissures. They usually decay very rapidly and in some cases nearly set at defiance the resources of the dentist. Other classes of teeth having this same interruption, are found to be uncommonly long, of a bluish appearance, the incisors are thin and narrow and the cuspids much pointed. The bicuspids and molars are small in circumference and have deep fissures upon their grinding surfaces. They have a soft, chalky texture and the decay is usually light colored and rapid. Pits and fissures are by no means confined to this class of teeth. In teeth of far better quality fissures, cracks and pits in the enamel are commonly found. They are between the cusps, more often upon the prominences of the cusps, here in the form of pits, and upon the approximate surfaces of the teeth. (See Plate, Fig. 9, 10 and 11.) Some of these probably have their origin from accidental causes. On the prominences of the cusps the pits are often found to lead into what are called undermining caries of the enamel, that is, a place where decay is more extensive in the deeper layers than is apparent upon the surface. The pit leads here into a decayed spot, where the particles of decomposed enamel within the cavity have crumbled away, forming a cavity. These are more frequent than is generally supposed. Sometimes the pit is a dark spot, which leads into this cavity and sometimes it is light and difficult to see. It can usually be detected in teeth which are examined by a mirror, where light is transmitted through them, when it appears as a gray or brownish spot within the enamel. Although the cavities of decay are at first within the substance of the enamel they rapidly enlarge and expose the dentine, when infection follows. Cracks are often found on the approximal surfaces of poorly organized teeth. They lead into a decayed tract of the dentine, which is separated from the enamel by the decay, and which is deeply pigmented in color a yellowish brown. The tubuli everywhere against the decayed portion are found to be full of microorganisms, gas-bubbles and granules. These extend in a dark tract nearly to the pulp, looking as tubules do in dried sections when they are full of air. (See Plate, Fig. 10.) On other sections where pits are found upon the prominences of the cusps, dark brown tracts running through the enamel to the dentine are seen. The tubes near this tract are found to be discolored and infected. This line of infection runs into the substance of the dentine in the direction of the tubuli and nearly to the pulp. Between it and the pulp, however, there is a lighter layer of tissue, which may be caused either by the resistence of the pulp to the inroads of infection, or may be an uninfected decalcified layer, caused by the acid given off by the microörganisms. (See Plate, Fig. 11.) Where a section of the recently infected tooth has not been specially prepared by staining to show the organisms, the infected tubes have in them, minute bubbles of gas, which look like micrococci. Some of the bubbles join together like little rods, having the appearance in photo-micrographs of bacilli, and may easily be mistaken for such. (See Plate, Fig. 12.) Their origin is probable in the action of an acid on the lime-salts of the dentine. This acid is given off as a waste product of the bacteria and is every where present in early infected dentinal tubes. It has the appearance of what Prof. Miller has described as broken pipe-stems in the dentine, but I do not think it is the same thing. It is an easy matter to prove that these gas-bubbles are not microörganisms by staining the tissue. I have frequently seen them unstained in sections of carious dentine to which the microorganisms were stained a deep red. In all specimens of stained, early-infected dentine, these bubbles of gas are present in large numbers. Cracks are often found to be present in the enamel on the proximal surfaces of the bicuspids and molars near the neck which lead into the dentine. I have reason to believe these are more numerous than we suppose them to be, and that they are the cause of much approximal decay. Where the dentine within its substance is faulty, as in the cases I have already mentioned, these cracks may be the source of infection equally with the fissures in the crown. Dr. George S. Allen, of New York City, is the only writer that I now recall, who has called especial attention to these defects, in this location, although Wedl may have mentioned them. Dr. Allen says that calcification commencing on the prominences of the cusps gives rise to as many points of calcification as there are cusps. When they meet, from some unknown cause, these cusps do not always unite. Among other places faults of this kind are found on the cervical portion of the enamel, midway between the buccal and palatal faces. They differ from those found on other portions of the tooth, in that they resemble more closely an ordinary crack, that might have been caused by mechanical force or dessication. I can attest to the correctness of Dr. Allen's assertion by sections made across this portion of bicuspid teeth. These show crevices or cracks through the enamel in width sufficient to admit of infection by any of the microörganisms found in decayed teeth.

DESCRIPTION OF PLATE.

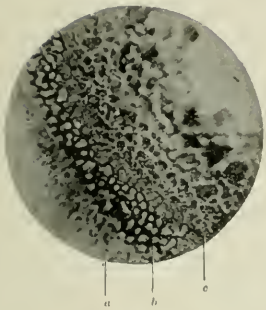
FIG. 1.—Section of crown of bicuspid tooth through the fissure from mesial to distal surface, showing a tract of imperfectly de-


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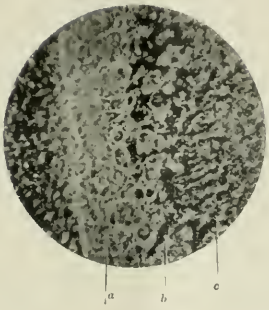

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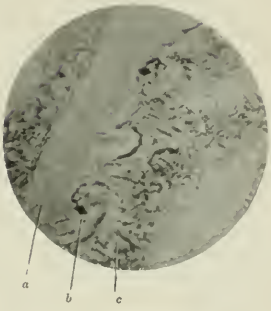
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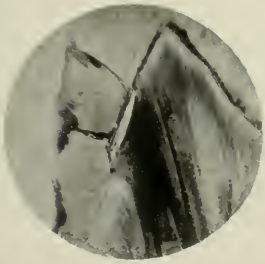


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veloped dentine and the white zones of partially decalcified matrix under the fissure. About 50 diameters.

FIG. 2.—The imperfectly developed dentine under a high power, showing masses of globules of various sizes, and an interglobular substance of a much less dense structure everywhere between them. The tissue is infected, the tubules being distended by microörganisms. About 1500 diameters.

FIG. 3.—Cross section of calf tooth at birth. A, layer of formed dentine; B, layer of calcoglobulin; C, layer of odontoblasts and pulp tissue. About 200 diameters.

FIG. 4.—From tooth of human fœtus, sixth month, vertical section, showing the deposit of calco-spherites on the formed dentine from the enamel pulp. A, outer edge of formed dentine; B, small globular masses, calco-spherites. About 1200 diameters.

FIG. 5.—Cross section of calf tooth at birth, showing a forming band of dentine. The layer is seen to be made up by the coalescing of the globular masses. A, forming band of dentine; B, calco-spherites and odontoblasts; C, pulp tissue. About 1200 diameters.

FIG. 6.—Cross section of calf tooth at birth. A, band of formed dentine; B, large masses of calco-globulin forming new layer; C, odontoblastic layer and pulp tissue. About 1200 diameters.

FIG. 7.—The same, showing larger globular masses at B forming the new layer.

FIG. 8.—Cross section of calf tooth at birth. A, band of formed dentine; B, buds of calco-globulin forming new layer (these are seen in the central portion of the picture to have become part of the layer); C, pulp tissue. About 1200 diameters.

FIG. 9.—Longitudinal section between the cusps of a molar tooth, showing a pit and fissure in the enamel; also undermining caries of the enamel. The dark lines at the base of the enamel are lines showing infection. Under the enamel the dentinal tissue is not very satisfactorily shown in the illustration. About 200 diameters.

FIG. 10.—Showing cracks in the enamel on the proximal surface of a bicuspid, through which microörganisms have invaded the dentine. The dark mass within the cracks is decay, the tubules being full of microörganisms. The space under the cracks is caused by this decay. About 200 diameters.

FIG. 11.—Longitudinal section of molar, showing a pit in the eminence of a cusp through which infection has reached the dentine, the line of infection reaching nearly to the pulp. About 200 diameters.

FIG. 12.—Appearance of the line of infection of Fig. 11, as seen under a higher power. Tubules are seen to be filled with gas bubbles, granules and microörganisms. About 1200 diameters.

EMBOLUS OF A BRANCH OF THE RETINAL ARTERY, VISIBLE WITH THE OPHTHALMOSCOPE.—DISAPPEARANCE OF THE EMBOLUS AND NEARLY COMPLETE RECOVERY UNDER MASSAGE AND NITRATE OF AMYL.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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OF OMAHA, NEB.

On February 27th, 1889, I was called to see Mr. C., æt. 29. He stated that about half an hour before, while at breakfast, the right eye suddenly became blind. In a few moments, however, on rubbing the eye and applying hot water, the field cleared up, partly, below, and then remained stationary until my arrival. The eye was found normal externally, but the ophthalmoscope showed the lower branch of the retinal artery to be filled with a whitish plug, from a point just back of the surface of the disk to about one millimeter beyond its border. The plugged portion of the artery seemed of normal calibre and was of a dead yellowish white color. Peripheral to the clot, the calibre was not perceptibly reduced but the vessel had the color and appearance of a vein. A rough test of the field showed the absence of the entire upper half and of the contiguous 20°–30° at the nasal side. Having no test-types with me, the vision was not accurately tested. The eyeball was at once massaged vigorously for two or three minutes, without immediate effect. The patient was then directed to massage the ball for two minutes every half hour, and to inhale 5 minims of nitrate of amyl every three hours.

At 3 P. M. of the same day the patient was seen again and reported a decided improvement. An examination showed no positive trace of the former clot; all the arteries looked normal with the possible exception of a slight thickening at one point of the wall of the lower branch, which may perhaps have been an adherent remnant of the plug. Unfortunately I neglected to examine the periphery with minute care in the direct method, but an ordinary examination showed no traces of bits of the plug impacted in this region, nor did a more careful examination on the succeeding day. The field now, about seven hours after the occurrence of the embolism, was found to be entirely restored in about 50° at the temporal side, the area corresponding to that part of the retina supplied by the median artery. The remainder of the upper half of the field lacked between 10° and 20° at the periphery, this blank being followed by a zone about 20° wide in which objects were seen dimly; followed in the upper nasal quadrant by a sector-like scotoma, with a very irregular border at the temporal side, reaching down close to the point of fixation. V.= $\frac{20}{30}$. The patient had already inhaled two five minim perls of the nitrate of amyl, and was ordered one more that day and two more the next forenoon; the massage being discontinued. The next afternoon the field was somewhat further improved and the dim area clearer. The retinal arteries appeared normal throughout, pulsating well on pressure on the globe; but to my surprise the characteristic œdema of the retina was well marked toward the centre of the fundus, in the temporal ¾ of the lower half of the retina.

No further treatment was given and the condition slowly improved till, on May 2nd, two months after the embolism occurred, with a normal fundus, the nasal two-thirds of the upper half of the field was contracted about 10° at the periphery and showed two small scotomata in the nasal quadrant with—0.5c ax. 180°, V. = $\frac{20}{30}$ in each eye. With regard to the etiology, the case gave no satisfaction. The patient was somewhat run down with over work, but aside from a chronic purulent otitis in the right side, was in good health. No evidence of kidney nor heart trouble.

Cases of embolism are so well known that ordinary cases are no longer reported, but cases in which a distinct well defined embolus can be seen with the ophthalmoscope are exceedingly rare. In the literature at my disposal, including full sets of Nagel's "Jahresberichte" and of the

journals of von Graefe, Knapp and Zehender; besides the hand-books of Graefe-Saemisch and De Wecker-Landotte, I have found but four cases; and of cases in which therapeutic measures apparently achieved brilliant results I can find but two. The cases in which an embolus could be seen are those of Steffan,[1] Ewers,[2] Mules,[3] and Hirschberg.[4] In addition to these Saemisch[5] and Landesberg[6] have each reported a case in which a swelling of the obstructed branch without any differentiation of color, could be seen just central to the point where it suddenly narrowed and became bloodless or nearly so. In Knapp's famous case,[7] in which a hæmorrhagic infarct was first demonstrated, the plugged arterial branch was simply seen to emerge, nearly bloodless, from a reddish dirty-gray spot on the disk, the same spot also covering the vein. In Samelsohn's case,[8] in which, besides embolism of the central artery posterior to the disk, a dark-colored spindle shaped swelling was observed in the course of an otherwise bloodless artery, the supposed embolus was more probably a bit of blood retained by an irregular contraction of the artery.

Besides the above, several cases of embolism of separate arterial branches have been reported, in which the affected branch had a normal appearance for some distance from the centre of the disk and then suddenly, without previous discoloration or swelling, became thread-like or perfectly bloodless. In these cases, as in those of Saemisch and Landesberg, it is probable that the embolus was right there, in sight, at the point of sudden diminution of the vessel's calibre, for while it is hard to believe that an embolus should be so near the color of the normal artery as to be indistinguishable from it, it is still more difficult to conceive of its being located at any other point.

The two cases in which therapeutic measures seemed to be of immediate benefit are those of Mules and Hirschberg, mentioned above. Hirschberg's patient came to him within a few hours after the occurrence of the embolism. The ophthalmoscope showed the branch of the artery running down and out, normal about four disk-breadths, then followed a short stretch of about $\frac{1}{3}$ a disk-breadth, containing a brownish "line-shaped" clot, followed, after a very short interval, by a dark-brown appearance of the further larger branches of the artery, which, in short stretches, were invisible so that the vessel appeared interrupted; vision = $\frac{15}{200}$, and the field showed a sector-shaped defect corresponding to the plugged vessel. The patient was made to look toward the nose while the ball was rubbed vigorously on the temporal side for about a minute till pain, lachrymation and phosphenes supervened. The patient soon reported vision improved, but no accurate test was made at the time. On his way home vision became normal and the next day the fundus and functions were normal. Mule's case appears to have been precisely like my own. His patient was a very healthy young woman who came to the hospital within an hour after the sudden appearance of a defect in the upper field. "Her right visual field was found contracted above. Seen under direct ophthalmoscopic examination the fundus showed a blocked lower retinal artery, the clot, which was colorless, being visible and extending from the entrance on the disk to the first bifurcation; the plugged vessel looked as if it had been stuffed with cotton-wool. The retina was slightly œdematous. Massage was tried and the clot disappeared, sight at once improved and the vessel was seen well filled." Noteworthy is the fact that the woman had a similar attack a year before and had recovered at once on rubbing the eye. In the abstract from which alone I know this case, it is not stated whether the recovery was complete or whether, as in my case, scotomata were left. In the discussion following Mule's paper it was suggested that the clot was probably composed of leucocytes, and some expressed doubt as to the embolic nature of the case. Frost thought the white appearance of the vessel was not due to its being plugged but to its being empty; and as this case is so similar to my own, the suggestion that the white portion of the vessel was empty, the real embolus lying further back, is worth considering. My reasons for thinking the whitish portions plugged and not empty are: first, that there was no perceptible diminution of the diameter at that portion; second, it is doubtful if a freshly emptied normal artery would look white at all. In Hirschberg's case the empty portions of the artery were not white but simply invisible. Later, when secondary changes have taken place, obliterated arteries appear as glistening white strings, but this plug was not a clear glistening white, rather dull and yellowish. Third, the relations of the branches of the central artery in my patient were such as to make highly improbable if not impossible for the clot to be located more centrally than the end of this white stretch. By reference to the sketch it will be seen that the central artery bifurcated almost at the level of the disk-surface, and the whitish stretch seemed to go clear back to the point of bifurcation, so that an embolus lying central to it would have plugged as well, the superior branch, which everything showed to be free. These considerations make me believe that the whitish portion of the vessel was plugged and not empty, at the same time I cannot say that it *must* have been plugged, for it can be urged on the other hand that I might have overlooked a

[1] Steffan, Nagel's Jahresbericht v, 391.
[2] Ewers, Ibid., iii, 238.
[3] Mules, Ophthalmic Review, August, 1888.
[4] Hirschberg, Centralblatt f. Augenheilkunde, Oct., 1888.
[5] Saemisch, Monatsblätter für. Augenheilkunde, iv, 32.
[6] Landesberg, Archiv f. Augenheilkunde, iv, 1, 109.
[7] Knapp, Ibid., i, 1, 31.
[8] Samelsohn, Ibid., iii, 1, 32.

slight decrease in the diameter; that the main branch with its thicker walls would be more apt to look whitish when empty, than the smaller branches which in Hirschberg's case were, where empty, invisible; and finally that the bit of artery containing the real plug, between the central end of the whitish stretch and the bifurcation of the central artery may have been so foreshortened as to appear wanting. The color of the plug might, at first thought, be urged against its genuiness, but *a priori* the objection is hardly warranted. Virchow[9] in prophesying that emboli would be directly seen with the ophthmalscope, said they would be recognized by their whitish appearance.

Regarding the suggestion that the plug was probably composed of leucocytes, this coincides with the friability which it must have possessed in order to be disposed of with so little permanent injury; though it is hard to imagine where such a clump of leucocytes could have originated in a healthy youug person. The permanent contraction of the field and the scotomata indicate secondary plugging of small arteries, such as would be naturally expected after the breaking up of a clot in a large branch; and though these were not detected with the ophthalmoscope, it is possible that they might have been if the fundus had been gone over with the pupil widely dilated.

With regard to therapeutics, there appears to be no good reason why massage should not be tried in every fresh case of embolism. In old cases nothing is to be expected from it, nor is there much reason to be sanguine as to its effects in cases where the plug is situated so far back of the disk as to be uninfluenced by changes in the intra-ocular pressure. In other words results are to be looked for from massage, mainly in cases of embolism of a branch rather than the main central artery. It will be observed, that the three cases in which it has apparently done good were very recent. In Hirschberg's case the embolism occurred during the afternoon and the patient was seen at seven the same evening. Mule's patient was at the hospital within an hour after the embolism took place; while my case seems to have been observed earlier than any other on record, namely, after about half an hour. A fair estimate of the value of massage and other therapeutic measures is interfered with by the fact that while it is only in fresh cases that any particular result is to be hoped for, these are also the cases in which spontaneous recoveries occur. Such recoveries are probably much more frequent than we have any idea of, for, occurring as they do, generally before there is time to consult a physician, there is little chance of the oculist ever hearing of them and if he does, after they have occurred, they cannot be recorded as recoveries from embolism on account of the uncertainty in the diagnosis. Mauthner,[10] who had the fortune to witness a spontaneous recovery while he was studying the fundus of the affected eye, lays such stress on this chance that he advises doing nothing for an hour after the embolism has occurred, lest the plug be fixed more firmly, while, if left to the natural forces, it might be loosened gradually and carried away. That this unfortunate result of interference might possibly occur cannot be denied, still it seems altogether probable that as a rule such remedies as massage and nitrate of amyl would only facilitate the natural process. I should therefore, most decidedly urge the use of active measures as soon as possible.

With respect to the use of nitrate of amyl I supposed until recently that mine was the first case in which it had been employed. I find, however, that in the discussion of Mule's case, Jessop mentioned having tried it in a similar case, without effect. Theoretically, it would seem to promise more than massage, especially in embolism of the central artery where the plug is so far back as to be uninfluenced by variations in the intra-ocular pressure; and where there is no heart lesion, both should be certainly tried. I ordered 5 minims every three hours not knowing how much could be borne. In another case, I should try using it every hour. Where a heart-lesion is the probable source of the embolus, it might be questioned whether the chance of its relieving the embolism were greater than that of sending a second embolus after the first or perhaps into the other eye. Still if the heart itself could stand it, I should think its use warranted, even then, if massage alone should fail.

[Since writing the above it has occurred to me that the embolus may have been of fat. This would correspond well with its appearance and friability.]

[9] Virchow, quoted by Samelsohn, loc. cit.
[10] Mauthner, Nagel's Jahresbericht, iv, 337.

EXTROVERSION OF THE BLADDER.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CHARLES B. PORTER, M.D.,
OF BOSTON, MASS.

The subject of the communication which I have the honor to present to you to-day is the report of operations upon two cases of extroversion of the bladder, a congenital deformity in which the bladder, with mucous surface exposed, protrudes hernia-like in the lower hypogastric region. Its anterior wall and corresponding portion of the abdominal parietes are wanting, and usually the symphysis pubis. The urine dribbles from the ureters, or is ejaculated in jets on coughing or sneezing. Its constant contact excoriates the skin of the genitals and thighs, and makes its possessor miserable and, with the attendant foul urinous odor, an object of repugnance to those

about. This deformity is more common in males than in females. The other parts of the genito-urinary system are usually present in a more or less developed state. My cases present one of each sex, and in the description of the abnormalities in the two will appear a résumé of nearly all those found in the two sexes. Although this deformity is distressing, persons affected with it live for many years. Vigneau collected seventy-one cases which had not been operated upon, and found that ten died between 10 and 20 years, seventeen died between 20 and 40 years, five died between 40 and 50 years, and one reached the age of 70 years.

Nevertheless, in some cases the mucous membrane takes on a change resulting in malignant disease, due, probably, to the constant irritation of the urine and clothes. In one case, a man of middle life which I had the opportunity to watch, the exposed bladder became studded with epitheliomatous masses, and his last days were those of supreme suffering. It will be interesting to spend a few moments in considering the evolution, so to speak, of operative interference to remedy this deformity. So far as I can ascertain, no operation for the relief of exstrophy was performed until the last half of the present century, when Mr. Lloyd, of St. Bartholomew's, in 1851, made an attempt to divert the passage of the urine into the rectum by passing a seton from the bladder through into the rectum, intending subsequently, after the fistulous tract was established, to close the gap in the abdominal wall by refreshing its edges and uniting them by suture. Unfortunately he was not able to complete the operation, as his patient died on the fifth day from peritonitis. Post mortem examination showed that the recto-vesical fold of the peritoneum descended much lower than normal, and had been perforated by the seton. Since Lloyd's unsuccessful attempt to establish a fistulous communication with the rectum this has been accomplished by Simon. I have not been able to obtain an account of the operation and the length of time the patient lived, but another writer who refers to the case states that death was due to pyelo-nephritis, rather than the result of operative procedure. Holmes, in order to avoid a wound of the peritoneum, endeavored to establish a tunnel through the perineum, with communication of the ureters with the rectum. Its permeability was delusive and he abandoned his idea. Thomas Smith diverted each ureter into the colon of the corresponding side by successive operations. His patient died after the second, and the ureter first operated upon was found impermeable. Sonnenburg has extirpated the bladder, uniting the ureters to the abdominal wall at a central point. A shield and urinal was a subsequent necessity. In all the various operations mentioned for diverting the urine from its natural outlet there are elements of serious danger. In connection with this subject it will be interesting to refer to the results of some experiments on dogs by M. Tuffier, of Paris, to establish a communication between the ureters and intestine, and others by M. Dastre, to unite them to the abdominal wall; all died of peritonitis or pyelo-nephritis. The transplantation of the ureters into the rectum upon a dog has been done successfully by Prof. Novarro, of Sienna, and the operation reported before the Italian Surgical Society of Genoa. Until 1853 no successful attempts had been made to cover the exposed bladder by flaps, when almost synchronously Roux, Richard, Pancoast and Ayers each performed a successful operation by the transplantation of flaps of skin from the adjacent parts. The method of transplantation of the flaps and the region from which they are taken varies with each operator and the extent of the case, and results only in a cover for the exposed bladder, since no sphincter vesicæ can be formed. In the adult, and especially the male, the introverted skin grows its hairs, and the deposition upon these of the salts of the urine forms concretions which are analogous to stone in the bladder, and produce similar symptoms. To reduce this reservoir to a minimum, Dr. H. J. Bigelow, of Boston, in 1876, dissected the mucous membrane from the exposed surface above a line drawn transversely across the orifices of the ureters, and turned a flap of skin on to the denuded surface, which united, leaving only the part below the line of the ureters exposed. This was afterwards covered by another operation. Tredelenburg, of Bonn, reported to the sixteenth Congress of German Surgeons a number of cases by a new method. He says that an effective bladder covered with a genuine mucous membrane can only be obtained by the direct closing of the edges of the fissure, forming in the same manner a urethra lined with mucous membrane and a normally formed penis, with the possibility of the subsequent establishment of the function of the sphincter vesicæ. This is the conception of an ideal operation. According to his experience the loosening up of the soft parts enough to allow this is not possible, on account of the wide separation of the pubic bones. He has, therefore, in children, and he limits the age to those under six years, performed section of the sacro-iliac synchondrosis on both sides, and, by continued pressure kept up by special apparatus, has lessened the pubic hiatus to one centimetre. In no case has he obtained continence of urine.

The bringing together of simply the refreshed edges of the bladder has been attempted twice. A Strassburg surgeon first dissected up a small flap around the bladder two centimetres broad. Having pushed back the bladder by means of a rubber ball ending in a small tube, he united over it, by interrupted sutures, the refreshed borders

of the skin, so that the ball found itself shut up in the new formed bladder. The stitches, with the exception of the two uppermost, came to naught, and the mother declined having anything further done.

Second Case.—In November, 1884, Dr. Hal. C. Wyman, of Detroit, did on a child five days old an operation as ideal as that of Tredelenburg, and without section of the sacro iliac synchondrosis. It was reported in the *Medical Record* of December, 1885, and from it I will quote the description of the operation:

"The child was given chloroform and the mucous membrane was removed in a strip one-half inch wide, running round the margin of the vesical wall, where it blended with the integument of the abdomen, except a small area which corresponded to the inferior wall of the urethra. Then an incision was made on each side through the integument and superficial fascia arising from Poupart's ligament, just forward of the anterior superior spine of the ileum, upward a distance of 2 inches, for the purpose of securing sufficient relaxation of tissue to let the opposite pared surfaces come together and unite. The pared surfaces were then transfixed with three hare-lip pins and a figure-of-eight ligature was passed about them, bringing the margins of the abdominal cleft in contact. Additional sutures were passed between the pins and on either side of them, securing perfect apposition of the opposed surfaces. The child progressed rapidly to recovery and a perfect union of the opposed surfaces resulted. It was my intention to make a second operation for the restoration of the urethra and dorsal portion of the penis, when two months later the child was attacked with convulsions, which terminated fatally, but had no apparent cause in the conditions leading to or growing out of the operation."

M. Pousson, surgeon to the Bordeaux Hospital, published last year a series of papers on this subject in the *Annales des Maladies des Organes genito-urinaires*. He had collected ninety-five cases, in many of which certain important data were wanting. He calls attention to the seeming great mortality, which amounted to fifteen deaths in the ninety-five cases, and says that at first sight the number seems enormous, for painful as the deformity may be, it does not compromise life. In justly estimating the mortality it must be remembered that of the fifteen deaths one was from cholera infantum five months after operation, one from pulmonary trouble one and a half months after, and one of erysipelas of the face; that reduces the mortality to twelve. Of these, Pousson was convinced that four ought to be attributed rather to a preëxisting pyelo-nephritis than to the operation itself. All told there remained eight cases in which death may be attributed to operative interference. Of these, four died of peritonitis, one of erysipelas, one of shock, and one an accident during anæsthesia. Of these eight cases three occurred where the urine was diverted into the intestinal tract, and five where the closure by flaps was performed. No deaths in the four cases of Sonnenburg and Niehans, where the bladder was extirpated and the ureters sewed to the anterior wall of the abdomen. No deaths in the six cases in which the approximation of the pubic bones was followed by bringing together the refreshed edges of the bladder; so that the operation of diverting the urine gives a mortality of 30 per cent.; operation by flaps, 6.33 per cent.; approximation of pubes, none; diverting of urine to abdominal walls, none. He concludes that age is indifferent to the success of the operation. All young children should be operated on as soon as possible, to take advantage of the vitality of their tissues and the rapid cicatrization of the wounds. The operator should not count on any coöperation of a child from 7 to 10 years of age, and if he wishes to rely on this as an aid, should defer interference to the age of 15. Although age diminishes the chances of success, it has been achieved in those as old as 40. Sex is unimportant.

CHOICE OF OPERATION.

With regard to the choice of operation, it seems to me that age and the extent of the cleft must determine. Up to the present time no operation has attained continence of urine. The results of diverting the urine into the intestine are not encouraging. Diverting the urine to a central point in the abdominal wall does not commend itself to me, although no deaths have followed the four cases I have been able to collect. Tredelenburg's operation has up to the present time achieved no more than the method by flaps, and I think any surgeon would hesitate to submit his own child to bilateral section of the sacro-iliac synchondroses as a preparative step to a closure of the vesical cleft. On an infant or young child Wyman's method is in suitable cases the best. It is practically Tredelenburg's, minus the objectionable feature of section of the sacro-iliac symphysis. The method by flaps is one adapted to both sexes and all ages. The surgeon, before operation, should inform himself as to the condition of the kidneys, and continually keep in mind the main result for which he is striving, namely, a free drainage of the urine, for otherwise the ordinary results from obstruction ultimately follow; these are dilatation of the ureters and destruction of the kidneys. None of the accompanying malformations contra-indicate the operation. The development of the prepuce and scrotum in the male, and the labia minora and majora in the female, furnish the operator abundant material for the display of his ingenuity in acquiring the flaps.

All the general rules of plastic surgery hold in these operations.

The flaps must be about a third larger than the gap to be filled.

They must be arranged in such a manner as to furnish their pedicles an abundant supply of blood.

During any delays in the operation they should be covered with hot towels, wet in an antiseptic solution.

They must be handled as little as possible, and rarely with forceps.

Any dragging on the pedicle endangers the vitality of the flap.

All bleeding must be arrested before the flaps are adjusted in position.

Light and gentle compression prevents any oozing between them.

The operation completed, they should be kept for hours under moist, hot, antiseptic dressings.

Perfect antisepsis should be maintained throughout.

Case 1.—A man æt. 25 years entered the Massachusetts General Hospital April 10, 1877. He had been a farm hand and able to do as much work as any one. There was complete extroversion of the bladder, the exposed portion being about 2½ inches in circumference and somewhat irregular in contour. A little below its middle and a short distance apart are the openings of the ureters. The mucous membrane is covered with ulcerations and concretions of the urinary salts. There is want of union between the pubic bones, which are separated about 2 inches. Just below the bladder there is a rudimentary penis about 2 inches in length; the urethra is exposed throughout, there being complete epispadias. The lower part of the urethra is turned up against the surface of the bladder, and the urine flowed constantly from each end of the sulcus thus formed down over the scrotum and perineum. On the under surface of the penis and the glans there is a large fold of loose skin representing the prepuce. The left testis is still in the abdomen, and on the right side there is a scrotal inguinal hernia. There is a slight umbilical hernia above the bladder. The whole region is excoriated from the constant irritation of the urine and the slightest touch causes intense pain. There has never been the slightest sexual desire or enjoyment. The patient was kept in bed, the parts carefully washed and oxide of zinc ointment applied to the excoriated parts. At the end of two weeks all the excoriations had healed and the skin was in a healthy condition suitable for operation. I decided to divide the operation into two stages: the first to obliterate that portion of the bladder above the ureters by Bigelow's method. The preliminary operation was as follows: The patient having been etherized, the mucous membrane of the bladder above the openings of the ureters was dissected off and the edge of sound skin surrounding this part of the bladder was refreshed. A skin flap about 1¾ by 4 inches large was then taken from the abdomen, the pedicle being above the right inguinal ring, and the longest diameter of the flap being nearly parallel with the axis of the body. The flap included the superficial epigastric artery, which was cut and tied at the upper end of the flap. The flap was then turned across the refreshed surface of the bladder and stitched to the surrounding skin with silk sutures. The wound from which the flap was taken was easily brought together and united. Warm compresses were held on the flap for several hours. In five days all stitches had been removed, and the wound of the abdomen was healed and the flap was firmly adherent to the upper part of the bladder. About four weeks after the first operation the parts had become entirely cicatrized, and the patient was up and about. A month after the first operation patient was again etherized and a second operation performed. At this operation I decided to make use of the skin of the penis, the preputial part of which was very abundant, to cover in the remaining exposed surface. The patient had never had any sexual desire. The penis was rudimentary and he wished me to make any disposition of it that seemed best. The prepuce devoid of hair would make the best possible flap to turn next the mucous membrane of the bladder, and thus avoid concretions which are so apt to form where hairs are present on the introverted flap. The corpus spongiosum with its urethral surface was dissected from the corpora cavernosa and left attached at its base. The skin of the penis was dissected off the corpora cavernosa as far down as possible, a double ligature of strong catgut passed through the corpora cavernosa at their origin from the rami of the pubes and tied each way, and the corpora cavernosa cut off close to the ligature. This left an abundant mass of skin and all the urethral mucous membrane. The penile portion was then split in the median line, the incision being carried down so as to allow the urethra to be brought through the slit; this was turned down and stitched to the edges of the cut so as to form a sort of trough running from the lower part of the bladder to a point which was near the root of the penis. The prepuce was then folded upon the penile skin and held in place by a catgut stitch on each side, so that on turning the flap up in front of the bladder the preputial portion was opposed to the mucous membrane of the bladder. The edges of the skin surrounding the bladder and the lower edge of the flap covering the upper part were refreshed and united to the edge of the preputial flap, which was also refreshed. The median slit was then united, with the exception of the lower part where the urethra came out. Thus it will be seen that the surface of the bladder was entirely covered in, the skin opposed to

the mucous membrane being the hairless skin of the prepuce, and the urethra forming a tunnel, draining the cavity thus formed at its most dependent point. Silk and wire sutures were used to secure the flaps in position, and the vessels, which were large and numerous, were tied with catgut. A bent glass drainage tube was introduced through the new urethra and left in; warm compresses were held over the parts for several hours. For two days everything seemed favorable for a perfect result; flaps were apparently healing by first intention, and there was good circulation in every part. At the end of the second day, however, there was a sharp hæmorrhage from near the stump of one of the corpora cavernosa, and the clots tore away the upper corners of the preputial flaps. On tearing up the end of the urethra, which was already firmly adherent, and turning out the clots, all bleeding ceased. The flaps were then held in place by means of strips of fine silk gauze fastened on with flexible collodion. In six days there was union throughout except at the upper corner, and all stitches were removed. After this three other trifling operations were necessary to close the very minute openings at the corners, and a little over five months after the operation everything was entirely healed and all urine passed out through the urethra. A shield with rubber bag attached was fitted and the patient discharged from the hospital.

Case 2.—A girl æt. 8 years entered the Massachusetts General Hospital January 3, 1889. She was healthy and well formed, but for complete extroversion of the bladder. The cleft extended through the mons veneris, symphysis pubis and urethra into the vagina, which was split throughout and formed a sort of trough down which the urine ran when she was in an upright position. The pubes were separated 3 inches. The mucous membrane of the bladder and vagina was exposed, bleeding on the slightest irritation. The ureters opened near the middle of the exposed surface an inch apart, and on coughing the urine was forced out in small jets. On straining the exposed bladder bulged out, forming quite a hernia. Surrounding the bladder was a ring of cicatricial tissue ½ inch wide. By the most careful rectal examination under ether, no uterus or uterine appendages could be felt. The child had always been well and healthy, and played about with other children until about two years ago, when she commenced to walk in a stooped and waddling fashion. The urine dribbled constantly and she was with the greatest difficulty kept clean. The parents are healthy and there has never been in either family a case of similar deformity.

OPERATION.

January 11, 1889. Ether given. A pattern in cloth was cut of the size required to cover the exposed surface. A flap of skin a third larger than the pattern to allow for shrinkage was raised from the middle of the abdomen between bladder and sternum. Its pedicle, which was broad, was attached just above the bladder. The flap was temporarily covered with towels wet in a hot solution of boracic acid. Two side flaps, each half the size of the large flap, were then cut from the pubic and inguinal region, with pedicle at the side of the split mons veneris. These were folded in hot wet towels. The skin around the bladder was now raised up about ½ inch, making a raw groove running around the margin of the vesical wall where it blended with the integument, except a small area which corresponded with the split vagina. The large abdominal flap was then turned down with the skin surface next the mucous membrane, and the edge stitched into the groove above mentioned, with fine catgut, leaving only on middle line a canal for passage of urine formed by the vagina. The two side flaps were then swung round towards the middle line, and their raw surfaces opposed to the raw surfaces of the abdominal flap. They were stitched to each other on the middle line and at their circumference to the same groove as the abdominal flap. In this manner a complete cover for the bladder was made. The abdominal wound from which the upper flap was taken was brought together by stitches in the middle line; the two internal wounds were left to close by granulation. A double rubber drainage tube was placed in the bladder thus formed. The seat of operation was covered with towels wet in a hot 3 per cent. solution of boracic acid, and they were changed frequently for a number of days. She made rapid recovery, the the wounds closing by first intention, except those at the side purposely left open to avoid traction on the flaps, and in less than three months was dressed and playing about the wards. A plaster cast was taken of the parts, and a hard rubber shield with urinal attached was fitted by Leach & Greene, of Boston. This she now wears, and I have the pleasure of showing it to you together with the patient herself.

THE RELATION OF TONSILLITIS TO RHEUMATISM.

Read by title in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY S. J. RADCLIFFE, A.M., M.D.,

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I am aware that I present on this occasion no new topic for your consideration, and am sure you might ask very properly, what profit can possibly grow out of its discussion. And yet we are all aware there are many simple questions in medicine not yet fully understood, and it is better to well develop those first, before we make an at-

tempt to penetrate into the more intricate. It is also well to remember that all questions in medicine tend towards one end; that the lesser is contained in the greater, and in developing the simple we gain an insight into the more complicated.

The relation of tonsillitis to rheumatism is a very plain question, and needs no especial treatment for its elucidation. There are many stranger things in our experience than the association of such diseases, and however paradoxical it may at first appear, there are but few present, who, if they would think over their cases, would not call to mind numerous instances where these two apparently distinct affections came so closely together, or were combined in the same patient so intimately as to give no doubt of their etiological relations, though at the time treated as distinct diseases.

There can be no doubt there is a connection between tonsillitis and rheumatism, the subjects of which are also in a more or less degree rheumatic subjects, but whether they have the rheumatic diathesis, is a problem not easily solved. In all probability it carries with it also this distinguishing feature. This is proven not only by the diagnosis, but also by the treatment. Remedies applicable to, and which in the main cure rheumatism, cure tonsillitis, and *vice versa*. I might add also, that the same exciting cause apparently operates in the production or development of either disease, namely "catching cold."

But we are far from being correct, however, when we say that "catching cold" is only the exciting cause of either tonsillitis or rheumatism. So far as our present knowledge goes we are not in a position to affirm that tonsillitis or rheumatism originates *de novo*, either from a previous constitutional disturbance, or from an external exciting cause only. It is generally believed that constitutional predisposition is necessary, but whether this opinion is correct, whether this state of the system is accidental, or the effect of a rapid development of some special atmospheric contamination, some specific germ absorbed through, or by the alimentary tract, there is still some ground for doubt. We know that after exposure to wet, and cold, under some contributing circumstances, as depression, or general malaise, an attack is occasioned either of the one or the other, or of both combined. We do not stop to consider whether the affection was already absolutely in the system waiting for something to develop it, but at once begin to treat manifest symptoms presented to us by the inflammatory condition of either the tonsils, or the fibrous structures about the joints.

As we cannot then positively affirm, that either disease has simply or only, either an external or internal origin, if either may develop in a previously healthy person, after exposure to wet and cold, we can easily reconcile other seeming discrepancies between them, as to symptoms, as well as to cause and effect. If we consider the tonsils as primarily organs of absorption, and not differing materially from the general lymphatic system, through which morbid material may enter the economy, it is very fair to conclude that such material may cause inflammatory action in its passage, or by arrest in their tissues, if afterwards, by continued absortion through the neighboring lymphatics, which converge towards the tonsils it sets up a more general febrile condition, locating itself, or its greatest force upon some of the fibrous structures of the joints, or producing some other widespread quite as definite febrile disorder.

It has been demonstrated that the material in quite a number of septic diseases enter the system through the crypts of the tonsils, and have their primary manifestation there, and there is no doubt that such is the case, though perhaps this formula may be extended or modified by adding that this function of absorption is shared by the general buccal mucous membrane, though the principal absorption, no doubt, is through the crypts of the tonsils. If the tonsils are absorbing glands to withdraw excess of buccal and pharyngeal secretions, and with them all material normal or morbid there may be mixed with these fluids, it is not to be wondered at that their continued functional action in this direction should make them particularly liable to inflammatory conditions, manifesting such conditions first locally; and the greater the liability and degree of action, the more intense and energetic the morbid material absorbed.

So far we see the relation of tonsillitis to rheumatism as regards its external origin, or its etiology from an external standpoint. We see that the rheumatic nidus, or germ, if I may so call it, may be a positive external entity, may penetrate into the crypts of the tonsils, may stop there, producing tonsillitis, or may continue its course, originating general rheumatism of the synovial membrane of the joints—a general rheumatic seizure expending its influence, instead of in the tonsils, on the various articulating surfaces. This is not only possible but probable. We know that most inflammatory diseases have an extrinsic cause, and it is not unreasonable to believe there is no exception in the case of either rheumatism or tonsillitis.

Even if we recognize the view that the morbid material exists already in the fluids, and need only the exciting cause to develop it into active life, this does not militate against the part taken by the excitant, the yeast, the ferment, to arouse the dominant affection—for the one is but the faggot, the other the fire that kindles the flame, and in either case the relation may be traced onwards from its incipiency, to its conclusion. Whatever may be the theoretical aspect of the subject, how-

ever, it is a well known, and simple clinical fact, that after, or during continued exposure to wet and cold, a person may be seized with either tonsillitis or rheumatism, and this is in many cases all we know or is the limit of our knowledge in regard to it.

We surmise, or assume certain things, as to the pathological condition of the blood, and other fluids, whether there is an excess of lactic or lithic acid; but whether this condition originated before or after the exposure, we are at a loss to say,—and we deal with the case according to this theory. If you make a clinical examination of a case of rheumatic tonsillitis you will find no very material or marked difference in the symptoms, and course, from those of an ordinary hyperplastic inflammation of the tonsils. You will find in rheumatic tonsillitis the induration is more marked, the inflammation is less inclined to suppurate, and the induration and thickening of adjacent paritonsillar tissues more considerable. There is also probably more intense pain and suffering, and its fugacity or tendency to shift position is more observable. But otherwise the case proceeds from the chill or chilly sensation and subsequent fever, to induration and resolution, in the same way that an ordinary hyperplastic tonsillitis would do, but is subject to treatment peculiar to itself. Though the differences in these two varieties of tonsillitis, are not very great, it is well to observe them closely, as very much depends on this observation when we come to the treatment. The difference lies in its mode of attack, the peculiarity of the inflammation, the rheumatic element in its composition, and the therapeutics necessary to arrest it.

I would insist then, in the examination of the many cases of tonsillitis that fall to our lot to treat, upon a proper differentiation in each case, that we remember they assume distinct types, as the rheumatic, and that they often have an intimate relation to a distinct affection, and develop in proportion to a general predisposition. All persons are probably to a greater or less degree predisposed to acute rheumatism (though the predisposition is unequal in different persons); as well as to acute tonsillitis,—but we may usually differentiate rheumatic tonsillitis in that it oftener occurs in robust, full-blooded persons, than in the weak, and anæmic, while other types of tonsillitis attack the strumous and delicate, that it is rare in early childhood, and in old age, is more frequent in the working classes than the well-to-do, that it occurs during the cold, damp weather of winter and spring, and in persons who have had attacks of articular rheumatism, in which its disposition to shift its position from one synovial capsule to another, and even to the tonsils was apparent, its severity being in proportion to the predisposition and its duration usually more considerably extended.

Having thus in a preliminary way alluded briefly to the more theoretical aspect of the subject, I will relate the history of the two following selected cases as an illustration of some of the relations of tonsillitis and rheumatism.

P. R., female, 23, single, regular, previously in good health, not subject to frequent attacks, but has had tonsillitis before, never had rheumatism. After exposure to wet and cold, on a very inclement day in March while viewing a procession, was seized next day with a very severe attack of tonsillitis. She had high fever, sore throat, dysphagia, swollen tonsils, almost approximating, intense pain of the throat and fauces, pulse 130, temp. 102.5. On the sixth day the inflammation and swelling had subsided and she was apparently well. Two days after the fever returned, the joints of the wrists and elbows, and then one joint after another became implicated, with the cervical region of the spine, making her quite helpless. She had two severe attacks of heart pang and syncope, and was in imminent danger. The attack continued quite six weeks before convalescence began, when her tonsils swelled and became painful again, though in a milder way than the first attack, when the tonsillar trouble with the rheumatism gradually subsided together,—leaving her in a weakened condition.

M. S., female, married, three children, in fair condition, menstruation regular, subject to subacute rheumatism for years. Suffers mostly during autumn and early winter. Swelling and pain begin first in the joints of the fingers and wrists, and from that beginning several of the joints suffer but not in regular order, somtimes only two or three, sometimes more. She suffers also from tonsillitis, but not always synchronously with rheumatism. If she had an attack of tonsillitis it wards off an attack of rheumatism, or if rheumatism follows, it is milder; if of rheumatism, the tonsillitis does not occur. There is a compensation between them—the tonsillitis especially modifying the rheumatic attack.

I might relate many cases of similar import, where convalescence from tonsillitis has been considerably protracted by a subsequent attack of rheumatism, either acute or subacute, or the reverse, from which it may be fairly concluded that rheumatism may induce tonsillitis, or tonsillitis rheumatism, under conditions favorable to their development.

An analysis of these cases from a pathological or even an anatomical standpoint, is no easy matter. From what we know of rheumatism we are led to believe it is a painful febrile disease whose seat is in the fibrous tissues—the joints, aponeurosis, sheaths of the tendons neurilemma, periosteum, or in the muscles and tendons, and not due to traumatism; or an inflammatory action of such tissues excited solely by external causes, or by a morbid condition of the circulating fluids,

usually demonstrated as an accumulation of the débris of tissue change, or metamorphosis, and principally found in the form of some not well defined acid, as lithic acid, in excess.

There is in the tonsils we may say, as an offset, anatomically, lymph follicles, fibrous and retiform, and peritonsillar connective tissue, which answer in every respect to the fibrous tissue in the joints, and other portions of the body; and if we place the anatomical relations of both in the same category, we cannot be otherwise than struck with the similarity of the symptoms, and course in both diseases. So that in this respect also, the parallel may be drawn in a way not inconsistent with their relation.

As regards the therapeutics of rheumatico-tonsillar inflammation, it would appear that the alkaline treatment is that which is best indicated. The same treatment indeed that is indicated in general acute rheumatism: bicarbonate of potassa, or soda with Dover's powder, salicylate of potassa, or soda, or salol, internally, with a spray of glyceride of borax and carbolic acid, keeping the bowels open and restricting the nitrogenous diet, with acidulous drinks, is all that is generally required in its management.

The termination of the attack is generally uncertain; is often protracted, and is very prone to leave a residual complication.

Thus the relation of tonsillitis to rheumatism may be traced pretty clearly by its etiology, its pathology, as well as clinically and anatomically, and also as regards its therapeutics, and in closing this brief sketch, though I am sure very imperfectly, of their relationship, I present the following conclusions as a review of the propositions I have attempted to make:

1. They have probably the same etiological factors.
2. These are not very apparent, but are doubtless represented by some agents, atmospheric in principle.
3. They are equally liable to the same cause.
4. Which may produce one or the other.
5. Their pathology is similar.
6. Their anatomical elements very nearly related.
7. Their symptoms and course very much alike.
8. Their therapeutics allied in every particular.

THE LOCAL TREATMENT OF SYPHILITIC PHENOMENA.—DR. G. FRANK LYDSTON, of Chicago, says that the obstinate headaches of both late and early syphilis, whether associated with cranial bone lesions or not, are benefited by frictions of the scalp with hydrarg. oleat., 10 per cent. In obstinate cases a blister to the nuchia, followed by mercurial plaster, is quite effective. There are occasional cases of cephalalgia associated with the cachexia syphilitica where the galvanic current is of great service.

REMARKS AND CLINICAL REPORT ON THE USE OF THE WEIGERT HOT AIR INHALING APPARATUS.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY E. L. SHURLY, M.D.,
OF DETROIT, MICH.

In presenting the following brief and imperfect report of the "Weigert Apparatus," I desire only to report progress and suggest certain indications for its further trial, that it may reach its proper level among the armamentaria for the treatment of that dreadful malady known under various conditions as *phthisis pulmonalis*.

Attention has been called before to the inhalation of *hot aerial medicaments* as a remedy; in 1879 I read a paper before the Michigan State Medical Society in which I called attention to a rude apparatus, which I had devised and had been using for some time, to enable patients to inhale a hot balsamic air, with the idea and result of diminishing excessive expectoration. My attention has also been called lately (by Dr. Price Brown of Toronto, Ont.) to cases of individual stokers and molders who have seemed to enjoy comparative immunity from phthisis, notwithstanding strong hereditary and other predisposing causes. The Weigert apparatus, however, is the best and most complete for carrying out such a plan of treatment, and just what its therapeutic value may prove to be is yet a question, for as far as I am able to learn, the highly colored accounts of its successful application do not seem to be borne out here—although perhaps in this country our facilities for experimentation may be meagre, and our conservatism so much greater compared with our old world professional brethren, that their results may not be a fair measure for judgment. It is greatly to be regretted that the apparatus has been *patented* by a *member of the profession*, and that the *commercial* element is so predominating in its introduction to use.

We have been using the Weigert apparatus in Harper Hospital, Detroit, since about March 14, 1889, and, although using it on about twenty patients, more or less, we have only used it in about eight with a constancy and exclusiveness that would serve as a test.

Case 1.—Mrs. S., æt. 39, pneumonic phthisis. Ill since last November; entered the hospital March 16, both lungs involved; right considerably broken down; sputum abounding with myriads of bacilli; patient very weak and emaciated, with hectic fever and anorexia; able to be out of bed only a short time during the day; temperature range, 97° to 99° morning, and 102° to 104° evening. Began administering hot air inhalation by the Weigert apparatus, of ten to fifteen minutes duration twice daily at a temperature of 100° to 110°, increasing duration and

gradually increasing temperature of air to 120°—the highest which could be borne—was obliged to discontinue on account of the discomfort, in the form of pain in the chest and heat of throat, experienced by patient; no rise of temperature followed, and often easier respiration. Died May 29.

Case 2.—B. O'C., male, æt. 29. Family history bad; hemoptysis eight months before entrance to hospital (March 5); in good flesh, some hectic fever, nocturnal sweating, considerable cough and expectoration, containing a few bacilli, some pus, much emaciated, and weakness growing. Examination showed consolidation with softening spots in upper left lung; pulse range from 90° to 110°, temperature from 99° to 101°; not much anorexia. Administered hot air twice, three and four times daily for from fifteen to forty minutes, at a temperature ranging from 120° to 200, the latter temp. on three occasions only; and 180° and 190° on several occasions; the immediate effects were generally good; no untoward signs or sensations following. He left the hospital for the South April 15, improved in every way, since then have not heard from him.

Case 3.—Wm. M., æt. 22. Entered hospital March 7. Been ill with cough, hectic, fever, etc., about six months; habits not good. Consolidation of upper right lung with softening at apex, also consolidated spots in lower right lung; respiration 26 to 30, pulse ranging from 90 to 115, temperature 99° to 102° at times reaching 104°, expectoration containing *no* bacilli. Began inhalations twice a day for fifteen minutes at a sitting, at temperature of 110°, increasing to three or four times a day of twenty to twenty-five minutes each, with temperature sometimes as high as 195° on three occasions. Inhalations seemed to cause nausea and vomiting; inhalations always caused increase of temperature and increase of pulse beat from 5 to 15 beats—temperature was raised from 1° to 3°. April 17, had hemoptysis; hectic fever diminished in frequency, and when he left the hospital, April 18, was stronger, with less cough and expectoration, and better appetite. He is away from here now, but, I hear, improving.

Case 4.—Miss K. McD., æt. 19. Entered the hospital March 19. Family history good; been ill two months with cough, expectoration, and severe hectic fever—looked anæmic; felt weak, and had severe nocturnal sweating and suppression of menses. Examination showed some consolidation and mucous râles over both "upper fronts;" *never had hemoptysis*, considerable expectoration, bacilli. Pulse range 80 to 100, temperature range 98° to 102.5° from 18th to 31st. Hot air inhalations from 100° increasing to 120°, four or five times a day. Discontinued after about ten days, as patient could not stand it, as it caused febrile movement, pain in chest, and breathlessness with nausea. How much was imaginary, cannot say. There was no diminution of bacilli. Is failing.

Case 5.—Miss N. W., æt. 17. Entered the hospital March 15. Healthy, ruddy appearance. Menstruation regular. Been ill one year with cough (on and off) and occasional fever. The illness began with an abscess in axillary glands. No discharge from axilla since November. Two months ago began to have a painful throat, and since one month aphonia. Not much cough or expectoration; bacilli in sputum; larynx swollen in arytenoid region and studded with small ulcers. Consolidation of upper left lung, but no râles; "is up" all day; occasional diarrhœa; pulse range 80 to 110, temperature 97° to 101°; some nocturnal sweating, and considerable diarrhœa at times. Administered inhalations twice and three times daily for about a week when patient could not bear them any longer on account of extreme pain in throat. On account of rapid swelling of larynx had to resort to gavage. Patient left hospital April 26, very weak and emaciated, and died May 24, 1889. This was undoubtedly a case of *general* tuberculosis, with laryngeal disease predominating.

Case 6.—A, M., female, æt. 18. Been ill with cough ten months. Hemoptysis eight months ago, and progressive emaciation, hectic fever, etc., since. Auscultation showed cavities over both upper lungs—more advanced over left. Great expectoration, with bacilli, and diarrhœa very severe at times. Entered hospital April. Pulse range 90 to 130. Temperature 96.5° to 104°, from April 24 to May 31. Respiration 26 to 32. Administered hot air twice to three times daily, from ten to twenty-five minutes at a time—patient could no take it longer. A temperature of 110° to 175° was the highest that could be borne. She took the inhalation well, and, excepting three times when she felt weak, experienced ease and comfort, with diminution of cough, expectoration, and fever. A severe attack of diarrhœa supervened May 3 and has continued, and she has grown rapidly worse, with œdema of feet, and great debility. Will probably live only a couple of weeks longer.

Case 7.—Miss M. D., æt. 36. Been ill three years. First ill with pneumonia. Entered hospital April 27, quite emaciated, weak, but able to be up and about considerably. Considerable cough and expectoration, with myriads of bacilli and pus. Pulse range from 100 to 120, temperature 99° to 102°, respirations 22 to 28. Nocturnal sweating, and chill about every third day—not severe however. Poor appetite, and occasional soreness of throat, and hoarseness. Auscultation showed mucous and gurgling râles all over right lung with loss of vesicular murmur or bronchial respiration, and a large cavity about middle; also mucous râles over "upper left." Hot air inhalations as often as could be borne and as fre-

quent—averaging three times a day probably—with temperature from 110° to 140°. The effects were good except that once in a while she felt too feeble to take them. Did not complain of burning or pain, she has gained a little. There has been diminution of moist sounds in lungs, no change in pulse rate or temperature, no more emaciation or loss of strength.

Case S.—Æt. 26. Entered hospital May 6. Family history good. Contracted an acute pneumonia six years ago since which time has never been well. Has coughed more or less ever since. Was in South (Tennessee) last winter. Never had hemoptysis. Not very much emaciated but has sense of great weakness. Bacilli in sputum. Auscultation showed bronchial respiration over upper and middle lobes of right lung, and bronchophony in patches. Mucous and sibilant râles over both upper fronts. No evidence of cavities. Pulse rate 100 to 120, temperature 97° to 104°. Began inhalations of hot air May 7. Averaged three séances daily, of fifteen to twenty-five minutes duration with temperature at 110° to 120° (never could bear them higher than 120°). After fourteen days was obliged to stop the hot air on account of exhaustion and loss of appetite apparently produced. Have renewed the inhalations.

I have five cases now under this treatment, in one of which (a very interesting one) improvement seems to follow. We have found it impossible to apply the method for such lengths of time as reported to have been done in Germany; patients *would* or *could* not do it. We have found, however, that healthy persons and those with only chronic bronchial catarrh can bear greater heat of air and for a longer time at a sitting than true phthisical cases. We always close the nasal passage during an inhalation.

We shall continue its use for we feel that it has not yet been thoroughly tested either in this country or Europe.

STOMACH REST AND CLEANLINESS.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY MARY E. BALDWIN, M.D.,
OF NEWPORT, R. I.

Mrs. B. W., aged 52, a widow eight months, came under my observation February 17 of the present year. She was one of five children of good physical parentage, except that the mother had much liver trouble. Mother, one sister and one brother very stout, and one sister has had an immense amount of bilious disturbance for twenty-eight years, with suffering so severe as to suggest bilious colic. Came first soon after first delivery. Infancy and childhood were not attended by any serious sickness, and was not in any sense a delicate child, although she had many "worm" attacks. Was always fond of candy, cake and sweets. Since first pregnancy, subject to bilious turns with severe attacks of pain, which have usually resisted all home treatment and have been relieved by hypodermics. Although morphine was frequently resorted to, the habit never was formed, and it has not been used the past two years. Since early remembrance has had returns of diarrhœa, but never vomited blood, nor passed it by rectum. Married at 18, and soon grew fleshy. Had four children; youngest is 21. Menopause occurred at 50, without any special symptoms, and a year later, eight months before first seen, the shock of her husband's sudden death caused a severe flooding, with no further return. Some fifteen years ago had a tumor—probably urticaria; took medicine for it about five years ago. It disappeared, and patient thinks there has not been a truly well day since that time. Mrs. B. W.'s frame is large and well proportioned; height, 6 feet, and 275 pounds was a usual weight until she began to lose flesh after her husband's death, and the loss continued until the middle of February, when it had fallen to 132. She was a bright, cheerful, and, although so stout, an active woman, until the past five years, at which time she seemed to lose her accustomed vim, often spit up food, and experienced much discomfort from gas in the stomach and bowels. Especially the last two years this train of symptoms grew more marked until the precipitation of actual wretchedness by the shock of bereavement and the exhaustion of a flooding. The eight months previous to the commencement of my knowledge of this case had been attended by the loss of more than half the usual weight. A good appetite stimulated the taking of food, which often came up as soon as swallowed, even causing her to leave the table seven or eight times during a meal. Sometimes food came up sour, again bitter, and usually mixed with a large proportion of slime and phlegm. Never a large amount vomited at one time, and always without retching. Thirst also demanded drink, which gave little relief.

Bowels usually regular, but in January had an evacuation after going four weeks without one. Later went three weeks without any action, and again ten days; each time the attendant suffering was extreme. Urine dark and thick; sometimes could retain, again had to pass frequently. In region of stomach no habitual pain or soreness to touch, but a weary, heavy discomfort and a crowding and distress following food as it went down. Solids and fluids caused equal discomfort, except that hot tea was readily swallowed, but hot water quite certainly induced vomiting. Patient said she could retain ice cream and Valentine's beef with ice, but that milk had not been tolerated in any form. Sometimes distress and gas relieved by soda, and at times ice water stim-

ulated the rejection of gas, with relief. Pyrosis was so abundant, especially at night, that towels were required to absorb the fluid as it came from the mouth and nose.

Sleeps very little until midnight, and after that only in short snatches. Some nights a cough all night, again none, and never in the daytime; no expectoration. Cramps in legs distressing at night, especially in right one. No headache. Loss of interest, flesh, spirit and strength reached such a degree that she was scarcely recognized by friends, and tears came as readily as in former years the brave and cheerful words had done.

Four months ago the general aspect was one of great weariness and weakness, the loss of adipose tissue leaving as shriveled an appearance of skin as is often seen in advanced age with emaciation. Teeth were in good condition, tongue broad and gray, and breath not especially offensive. The throat showed no general thickening of the mucous membrane, but was relaxed, with enlarged follicles. Heart and lungs gave no signs beyond those attendant upon the general depreciated condition. Was unable to detect an enlarged liver or dilated stomach, or any abnormal condition of the urine.

Diagnosed catarrh, gastro-duodenal and œsophageal, and explained the absence of dilatation by the ease and frequency of the stomach's rejecting its contents. Reasoned that cleansing and resting this demoralized stomach might prove of service, cleansing to include strict supervision of what was taken into the stomach, as to quality, quantity and intervals, as well as the removal, at stated times, of the undigested food remaining, with the results of disordered secretion, etc.; rest to include giving the stomach a minimum of actual work, and also preventing reflex weariness by not talking, using arms, or especially by avoiding the dwelling upon the recent affliction, and by rising above the tears and securing as many hours of sleep as possible in the twenty-four. Very fortunately Mrs. B. W. was able to change, for about six weeks, her usual home and surroundings for the home of an intimate friend, who is a most cheerful, devoted and sensible woman, thus securing a most important aid.

At first the stomach tube removed each morning before taking food the contents of the stomach, which consisted largely of mucus as clear and tenacious as unbeaten egg albumen. Twice a day toasted bread, Graham wafers, rare steak, and the white of coddled eggs formed a list from which to choose in very moderate amounts. The first food of the day by the stomach was not taken until noon, this rest being made possible by giving a nutrient enema in the early morning. A second enema in the afternoon with bromide, and a third at bedtime, added further relief to the stomach and secured sleep. The one in the afternoon was not long continued, but the one morning and night has been regularly given to the present time.

After eleven days of daily cleansing it was omitted every other day and some food has been taken at breakfast time whenever the washing has not been indicated. The interval to the present time has not exceeded one week, but has never again been shortened to twenty-four hours.

The diet list has been enlarged from time to time to include tea, chicken, the whole egg, ham, chipped beef, fish, oysters, lobster, freshly boiled potatoes, spinach, asparagus, strawberries and Graham gems. Ice-cream has been indulged in two or three times only to be regretted, as the curds and odor of fermentation at the next washing would testify, and thus far no milk has been allowed, as a few trials gave no encouragement for a repetition. Any new article of food has been first taken at the last meal before a washing, so as to know if any was left undigested.

This patient's progress has been very satisfactory to the present date. Any time of increase of any of the unpleasant symptoms has been directly traceable to the emotions or to tire of mind or body—once by sewing with very long threads, once by over-walking, once by talking over bereavement with a friend not seen for some time.

Now the countenance is bright and cheerful, color good, and 8 lbs. of flesh have been gained. Ordinary walking, driving, church going and lighter housework give no inconvenience. The abnormal thirst and appetite disappeared the first ten days of treatment, and a regular daily evacuation of the bowels has not been missed since that time. Not a mouthful of food has been thrown up since the first washing, but some days "froth" comes up—when measured not to exceed ½ oz. in twenty-four hours.

Nights have been uniformly given up to sleep, and each afternooon a rest is taken—usually a sleep.

Very little medicine has been given. Some digestive aids, bromide in night enema, soda and rhubarb at bedtime, 10 grs. of bismuth after the washing, and small doses of calomel and soda repeated at intervals about comprise the sum total.

Have not been able to make any satisfactory differential acid tests, and had hoped to discover some way of causing milk to be tolerated; still hope to do so as a valuable study for the large class of children and adults that cannot take it. The œsophageal crowding is quite relieved while a plaster can be worn, but it soon causes so much eruption of an eczematous character as to demand removal by the itching and annoyance. This crowding is really the only annoying symptom at this time.

I am not going to give a wearisome detail of further cases, as this one embodies several important points which would only thus be repeated. The matter of the so-called "worms attacks" in

children, with the ever recurring days of fever, vomiting, heavy tongue and foul breath, may receive a moment. The intervals are usually preparatory stages, with the sweets between meals, for the cleanliness and rest which a well stomach says in no doubtful way that it must have. Medicine is given, the gastro-intestinal tract is freed from the accumulation, and the weary round is again entered upon so soon as pampering can tempt. The child may often be reasoned with, hired or coaxed to leave out the dear "plain cookies," ginger snaps, sugared bread, etc., which have ruined his appetite for meals or for proper food between meals. Not many weeks of experience are needed to convince a child of 6 or 8 years that bread and butter are better with an appetite than are cakes without one. I have known so many children improve in color, strength and flesh by this simple means, cheating the months and years out of "worms spells," that I believe an early resort to this plan in the childhood of the patient reported might have prevented the development of that "natural" biliousness which caused so many attacks of gastro-duodenal catarrh after eighteen years of life.

Recently I have observed some aggravated cases of Riggs' disease, and I beg to point out that its accompanying vile and characteristic breath may well be considered a warning of danger; a warning not only to be considered on account of the vitiated air thus presented for inhalation, but also on account of the actual swallowing of the products of fermentation, by which means the morning meal is presented to a stomach ready to vitiate any wholesome nourishment. It is like the unwashed milk-can of the previous day.

THE IMPORTANCE OF EDUCATING OUR YOUTH IN THE PRINCIPLES OF HYGIENE.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY LEWIS P. BUSH, M.D.,
OF WILMINGTON, DEL.

One of the greatest difficulties in the way of the successful working of our State Boards of Health, is the want of confidence of the people in the statements which we bring before them of the importance of hygienic subjects. It is so difficult for the people at large to appreciate the truth that danger to health and life are strown thickly around them; that the air they breathe, and the water they drink, which was inhaled and drank by their ancestors, who they believed "died when their time came," and not before, may be deleterious to them; and that many of the diseases which afflict them, and the deaths which remove from them the dearest objects on earth, are not a visitation of Providence, which they could not obviate by any means in their power.

When a tree falls upon one of the family, or a neighbor, or the mangled body of a friend or relative is carried home from beneath the wheels of a railroad car, it is easy for them to appreciate both cause and effect. But when they are told that the clear and sweet water which they draw from their well, or the effluvium from a mass of decaying vegetable matter, or from an old stagnant pond, is gradually introducing into their systems a malign agent which will sooner or later induce disease, and will surely reduce the term of their life, they retreat within their old covert, declaring that they can neither see nor feel the force of our protestations; and cast aside the pamphlet as containing the lucubrations of one who has made a hobby of the subject, and declare or resolve that they are not to be scared or humbugged by such fanciful ideas. Is not this true as a rule? I am sure it is true; and that it is occurring every day in every part of our country. People have been so long impressed with the notion that death is a visitation from God, and that He sends their diseases among them, instead of referring them to their own ignorance or carelessness, that it is no easy matter to convince them that they are in error, that these new notions are worthy of their most serious consideration, and that they are second only to the care of the health and life of their soul. Every one who has given thought to the subject knows how difficult it is to root out old prejudices existing among the people, and to implant new and opposite views; and that this is the reason why we are so subject to be disregarded in our efforts to do them good.

What then shall we do? for it must be apparent to all interested in our State Boards of Health that we progress slowly in our efforts to indoctrinate the people with hygienic truths. Even a large part of our physicians believe that it is not *their* mission to prevent, but to cure, disease; and they give hygiene only a passing look, and the people think none the worse of them for it. It seems to me that we must begin at the beginning; we must give the subject of health a much more important place in our public and private schools; early implanting in the minds of the children the knowledge of the value of health, and of the means of preserving it, by putting into their hands such books as will bring before them not merely the anatomy and physiology of the human system, but still more, the principles which are requisite to preserve the vigor of mind and body, and which will waru them against the deleterious agencies which lie concealed both in air and water, and which are the cause of more deaths than all other occult agencies together.

As far as I know, this subject has not attracted as much attention in our health associations as it deserves; and from various instances which have

come under my observation, I have been led to present these thoughts for the consideration of this Section.

There must be a widely disseminated conviction of the truths upon which our Boards of Health are founded before we can hope to elevate the status of the health of our communities to the point which we desire. It must be strong enough to supplant the prejudices above alluded to, which have an abiding presence in the minds of the people; and this can only be effectually done by the means here suggested. I do not say that our Boards of Health have been failures; on the contrary, they have been of great and inestimable value in educating the better part of our communities, and are gradually taking a deeper hold on their conscientiousness. So we must labor on, not relaxing anything already gained, as in all our efforts to bring up the people to a higher plane in any improvement of their condition, we constantly find great cause for discouragement where we expected sympathy and assistance. We need only to refer to the retrograde movement in Boston, when the efficient State Board of Health was disbanded, and the venerable Dr. Bowditch, with all his valuable experience in hygienic matters, was supplanted, and the efficiency of the system embarrassed by that which was substituted.

The wisdom of our legislators does not always extend into the invisible; they can forecast a loss of political influence and power—or they think they can; though even here in their favorite haunts their wisdom sometimes proves to be folly—so when everything around seems quiet, and no pestilence threatens immediately, and death seems to have fled to some other sphere, they demur when you ask them to assist in executing plans for the prevention of disease, because they can't see the immediate propriety of such action. The enactment of a law on this subject brings no votes, and the rejection of it loses none; and hence they easily postpone the matter indefinitely. Why? Because constituents care about as little for the law as do their representatives. If the people were as well educated and impressed with the inestimable value of our subject as they should be, or as they are in regard to the value of their business affairs, there would be a different set of men, and a different course of legislation; and this subject, instead of being the last to be thought of, would take its proper place on the list of the legislative bills.

It is not my wish to advance any opinion upon the merits or demerits of the various books which have been produced as proper for the instruction in hygiene in our schools, except in a general way.

When the subject of physiology was first introduced into our higher schools, it was mainly confined to the scientific exposition of the structure and functions of the human body; leaving the application of the principles there set forth to the discrimination of the pupil, as circumstances might arise in the future. This was well as far as it went, and it was all that the times demanded; but in the present progressive stage of hygienic knowledge, it has become evident that this kind of exposition is insufficient. That class of books ought, therefore, to be discarded, and others possessing the proper requirements be substituted. There are such to be obtained, which set forth the laws of health, and which should be commended to school boards, should be heartily appreciated by the teacher, and should have no secondary place in the curriculum of studies. When this takes place, we may expect the next generation to be ready to uphold the hands of those who are endeavoring to forward this beneficent movement.

In advancing this cause there is no class of men who have more influence than physicians, and hence whenever that influence can be brought to bear upon our school directors, it is plainly our duty to exert it in whatever way seems most practicable for accomplishing the desired purpose.

A CASE OF PAINFUL SUBCUTANEOUS NEUROMA (NEURO-FIBROMA).

Read in the Section of Dermatology and Syphilography, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. ABBOTT CANTRELL, M.D.,
OF PHILADELPHIA.

Jack C., 29 years of age, was born, and has always lived, in New Jersey. He is a farmer by occupation, although obliged to retire temporarily at times, on account of the distress in the arms. His previous health was always excellent, and with the exception of a sister, his family have never presented a similar disease.

He noticed, for the first time, about fourteen years ago, a small round nodule on the left arm, accompanied with intolerable itching, but without pain. This nodule increased in size, slowly but steadily, reaching its present dimensions in about four years, by which time there four new and smaller lesions in the same vicinity. In eight years after the appearance of the first nodule a solitary lesion was noticed on the right arm correspondingly, which in four years was accompanied by five others. The man does not know exactly when the pain first began, but believes it was between four and five years after the appearance of the first tubercle.

This man presented himself for treatment at the clinic in April, 1889, showing the lesions on both arms about midway between the tip of the shoulder and a point corresponding to the insertion of the deltoid muscle, being grouped on each arm, those on the left arm being five in number, the larger occupying the centre of the group,

and being the size of a pea, while the others surrounding it were about the size of a pin's head.

Those on the right arm were similar in size, but there were five surrounding the central figure. The lesions are separated, one from the other, by about 5 or 6 lines. They are firmly situated in the skin and movable only with it. They certainly must run down into the subcutaneous tissue. They are elevated between 2 and 5 lines above the surrounding skin; the skin covering them is tightly drawn, being very smooth and shining brightly. The epithelium seems intact. The skin over the top of the larger lesions is of a yellowish pink, while at the base it is almost a purple; the smaller lesions are normal at the base but yellowish at the summit. All the lesions are perfectly round, the larger one looking as if a pea had been placed under the cuticle and was holding it out beyond the surrounding skin.

Surrounding the lesions the skin looked entirely healthy, there not being a single dilated capillary visible, as might have been expected.

At the appearance, and during the continuance of the pains, there was no change of color, although the part became warmer than usual, remaining so for a short time after its subsidence. Cold and heat, from what I could learn, did not affect him in the least, but if slightly touched a great amount of pain was experienced. There is surely a deep connection with a branch of the brachial plexus.

The pains, for which trouble he applied for treatment, were of a paroxysmal nature, and constituted the whole distress. They began by appearing slowly about four years after the appearance of the first tubercle and got worse as the disease progressed. I did not see him in any of the paroxysms, but from what he says I could readily imagine the greatest torture. The pains at times resembled an aching tooth, beginning with a throbbing sensation, and getting gradually worse, at last giving several great jumps almost causing him to fall to the floor. These pains lasted from fifteen minutes to one-half hour, but were quite frequent during the day, and always worse at night, which only happened once or twice a week. The friction of his wearing apparel kept up a continual pain throughout the day, and at night the bedclothes could not be borne on the arms. When suffering from the worst pains he is oblivious to what is transpiring around him. If perchance the lesions be violently struck, or the arm be given a sudden jerk, the spot feels as if a sharp pointed instrument had been inserted, almost causing syncope, while the pain would last several hours; in fact, sometimes lasting all through the day—causing him to be constantly on the move and trying to forget it by the best possible means. If the lesions are handled slightly, as when examined, there is considerable pain.

He says he dislikes to go to bed on account of not being able to lie on either side, and fearing to lie on his back, lest in a moment of restlessness he may turn over on either arm, and be awakened suddenly as if he had been struck a sudden blow, so on account of this, when the pains were at their worst he occupied a large armchair and a footstool.

The day preceding a storm he feels very restless and uncomfortable, but on the appearance of the storm he is no worse. He feels very comfortable in settled weather, be it warm or cold.

In a careful search of the literature of the subject, I was only able to find four cases that present any similarity to the case of to-day—those of Duhring, Kosinski, John Ashhurst, Jr. and Jonathan Hutchinson, Jr. Most of the other and previous cases I feel are examples of the "painful subcutaneous tubercle."

Duhring's case, a man 70 years of age, first noticed the disease ten years previously; it occupied the left scapular region, shoulder, and the outer side of the left arm as far down as the elbow, completely covering these parts.

Kosinski observed it in a man 30 years of age, who noticed it for the first time when 16 years of age, when it occupied the posterior and outer side of the right thigh, as far down as the lower third, and a portion of the buttock. There were as many as a hundred lesions.

In 1883 John Ashhurst, Jr., amputated the thigh between the middle and lower third. The flaps sloughing, a reamputation was necessary. Within a year, a small lump, tender to the touch, appeared in the skin, posteriorly and a little to the outer side of the stump.

Jonathan Hutchinson, Jr., reports a neuroma of the parotid in a girl 20 years of age.

I had hoped to-day to show microscopical sections of my case, but the man proving obstinate, would not allow me the privilege, so I will make the best of the bargain by giving the microscopical reports of the other cases, and show by them the fibroid nature of all these cases.

That of Duhring showed the "corium to be infiltrated with a new connective growth, which was firm in structure. The tissue, beneath and in the mass of the specimen, consisted of a solid, resistant-looking connective tissue, irregularly developed and uneven in arrangement. The bulk of the tissue was old in appearance and fitted together, the new cell elements being entirely wanting, the connective tissue fibrils being closely packed in places, forming wave-like bands. There were also numerous free fibrils of elastic tissue scattered here and there, and there were no nerve trunks or branches found in the mass."

In Kosinski's case, "the mass showed a consistence of gray nerve fibrils with a great quantity of a dense fibrous tissue, interspersed with some connective tissue."

Ashhurst found "interiorly in the tumor a somewhat elastic, rather dense-looking growth of

whitish color, over which passed yellowish fibres, probably strands of the sealed nerve. Microscopically the interior showed an entire absence of nervous elements and a section exhibited fat cells, abundant fibrous tissue, some spindle cells and numerous free nuclei near the enlarged and dilated blood-vessels."

Hutchinson came to the conclusion, after a very exhaustive examination, that his case was undoubtedly of a fibroid nature, while it consisted of connective and a quantity of fibrous tissues.

With a summary of these four cases, all of which showed in their microscopical examinations a structure consisting of fibrous and connective tissues, resembling those of the human body, also all sections of heretofore examined fibromatous tumors, I cannot but feel that to place them with the fibromata would certainly be to place them where they belong—calling them neuro-fibromata.

A CASE OF ACUTE RHEUMATIC LARYNGITIS OF GONORRHŒAL ORIGIN.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Cssociation, June, 1889.

BY W. K. SIMPSON, M.D.,
OF NEW YORK.

I present the following history on account of the apparent rarity of the case, and in so doing hope to add somewhat to the meagre literature of the subject. In the perusal of recent literature, and the reports of various throat clinics, and from inquiry among medical friends, I have been unable to find any reference to a similar case, thus convincing me that it is in some respects unique, and that the involvement of the larynx in acute gonorrhœal rheumatism is an extremely rare occurrence.

Sigimund H., æt. 23, single; Poland; cigarette maker; was first seen by me on February 23, 1888, at which time these notes were taken. He has had three attacks of gonorrhœa, the last one being five weeks ago; there is some urethral discharge at present. Three weeks ago he complained of pain and stiffness in the left knee, which shifted to the right knee, and then to the left hip, rendering locomotion very painful. Three days ago pain and swelling began in the left thumb, extending to the anterior surface of the wrist and back of the hand; and at the present time these parts present the typical swollen appearance of acute rheumatic inflammation.

The throat symptoms began three days ago, in the morning, with painful deglutition; and on the following morning there was a swelling over the lower external portion of the larynx, which swelling, at present, has disappeared. The swelling was very painful on pressure, especially on the right side. In the evening the patient became hoarse, and any attempt at talking was very painful.

Examination of the throat to-day reveals painful deglutition; pain on pressure over the right side of the larynx; almost entire loss of voice; no cough. Internally, both arytenoids are swollen and red, the right one much more than the left, being also slightly œdematous, resembling tubercular laryngitis, and is, along with the right vocal band, immobile on phonation. The whole of the mucous membrane of the interior of the larynx is hyperæmic, the left vocal band being slightly injected, while the right vocal band is swollen and of a deep purple color.

Treatment consisted in placing the patient on sodium salicylate, gr. xv every two hours, and applying a saturated solution of sodium bicarbonate to the wrist-joint.

From Feb. 23 to 28 there was no improvement in the throat symptoms; swelling was increasing and breathing was becoming embarrassed. On Feb. 28 iodide of potash internally was substituted, and on Feb. 29 a blister was applied over the right side of the larynx, which caused improvement in the laryngeal swelling. This improvement continued, and on March 6 the swelling was entirely reduced, and the voice was very much improved; but there was still very little motion of the right arytenoid and right vocal band, and the color of both was still very red.

MEDICAL PROGRESS.

TREATMENT OF ERYSIPELAS BY ANTISEPTICS.—M. JORISSENNE finds that in erysipelas the streptococci are so deeply seated that it becomes necessary to employ fatty substances as excipients in order to secure more prolonged contact of the remedies employed. For this purpose lanoline is unsuitable because it increases friction; vaseline prevents absorption; lard increases cutaneous irritation. The reporter therefore employs a mixture of cacao butter and vaseline as a suitable and convenient excipient. The most reliable antiseptic is sublimate, with which the reporter has achieved constant success in the erysipelas of the head occurring in newborn babes and complicating meningitis, as well as in the gangrenous erysipelas affecting the scrotum of old men, and in adults generally.—*Le Bulletin Médical.*

TREATMENT OF GASTRIC NEURASTHENIA.—In the treatment of dilatation of the stomach, according to DUJARDIN-BEAUMETZ, there are two principal indications: the one is addressed to the gastro-intestinal disturbances, the other to the condition of the nervous system. To fulfil the first of these indications there are two plans of treatment: the first comprises intestinal antisep-

sis; the second includes various mechanical methods of treatment which act directly upon the stomach.

Intestinal antisepsis has for its object the prevention of the development of toxic substances in the digestive tube, and is accomplished by pharmaceutical means, by laxatives, by washing out the stomach and intestines, and by a properly chosen regimen. The following measures should be observed:

1. The patient should take one of the following cachets at each mealtime:

Salicylate of bismuth	āā	10 grm.
Magnesia		
Bicarbonate of soda		

For 30 cachets.

If the trouble is very far advanced:

Salicylate of bismuth	āā	10 grm.
Naphthol (a)		
Magnesia		
Bicarbonate of soda		

For 30 cachets.

2. At bedtime the patient should take a dessertspoonful of the following in half a glassful of water:

Senna pods (treated with alcohol) in powder	āā	6 grm.
Sublimed sulphur		
Powdered fennel	āā	3 grm.
Powdered anisum stellatum		
Pulverized cream of tartar		2 grm.
Powdered licorice		8 grm.
Powdered sugar		25 grm.

When the powder does not produce the desired effect, or is not well borne, the patient should take a liqueur glassful of Rubinat or Villacobras water every morning, or else a dose of podyphyllin or cascara. If there is considerable dilatation the stomach should be washed out; and if it contains putrid matter, disinfecting solutions should be employed, such as boric acid, 10–1000, or naphthol (a), 1–1000.

3. The cold douche should be applied to the spinal column every day for not longer than 15 seconds (if the patient is a lady, the feet should be douched with hot water, and after the douche dry friction should be vigorously employed).

4. Open-air walks and muscular exercises are favorable.

5. The following dietetic points should be carefully observed: At least seven hours should intervene between the two principal meals, which should be eaten the first at 10 or 11 A.M., the second at 7 P.M.; neither food nor drink should be taken between meals; diet should consist chiefly of eggs (underdone), purées of potatoes, haricots, lentils, revalescière, racahout, lactated farina, panada, rice, maccaroni, green vegetables well cooked (purées of carrots, turnips or peas, Julienne soup, cooked salads, spinach), finally, stewed fruits, except grapes or strawberries; game, fish, shell fish, cheese, and all foods that are too liquid, particularly thin soups, should be excluded; bread should be toasted; as for drinks, nothing should be taken except 300 grm. of a mixture of white wine and water, but no effervescing drinks, no undiluted wine, and no liquors should be taken. It may be remarked that wine of cinchona, such as is frequently given as a tonic to patients with dilatation of the stomach, is more injurious than useful.

The mechanical methods of treatment referred to include Glénard's pelvic bandage—a broad elastic bandage which is strapped over the abdomen—massage, and electricity.—*Gazette Méd. de Liége.*

A New Method of Skin-Grafting.—Dr. Franz Buttgenbach (*Gaz. Méd. de Liége*) reports a case in which he adopted a new plan of skin-grafting. The case is as follows: S. H., of Liége, æt. 61, was admitted on the 28th of November, 1889, to the *Hôpital des Anglais* with an indolent ulcer of two years' standing, situated upon the lower portion of the left leg. This ulcer measured 22 × 14 centimetres. The patient requested a cure or an amputation. The ulcer was disinfected with carbolic acid and dressed with iodoform-gauze, and the patient ordered to remain in bed. When the patient had been in bed a few days the wound began to show signs of healing, a zone of cicatrization forming. One day, while dressing the ulcer, a little grayish-white point was observed in the midst of the ulcerated surface; this seemed to be a mass of new cells, transported probably by the solution or by the gauze. The idea was then conceived of transplanting some of these new cells from the zone of cicatrization by means of a bistoury. Success attended the effort made. Every five or six days little islands of cells were transplanted to the centre of the wound, and these were protected by a sheet of gutta-percha covered with a carbolic acid dressing. At the end of a month the ulcer was perfectly cicatrized and the patient was discharged early in January, 1890.

Accouchement after Extirpation of the Sacrum.—Lihobztky reports a case in which, after he had performed Kraski's operation for cancer of the rectum, the patient recovered and, becoming pregnant, gave birth to a living child weighing nearly 9 lbs. It was of interest in this case to observe the mechanism of labor, which was normal, and in the absence of the sacrum was under the influence of the muscles and ligaments of the pelvic floor. Delivery was normal, proving that in multiparæ or women with large pelves the presence of a resistant pelvic floor is not indispensable to the rotation of the occiput.—*Gaz. de Gynécologie.*

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SATURDAY, APRIL 12, 1890.

LAPAROTOMY IN THE AMPHITHEATRE.

One of the evil effects of the introduction of antiseptic methods was the removal of abdominal sections from the public clinics of our hospitals. Students were unable to familiarize themselves with the operative details, practitioners were left to entertain fear and distrust of methods they could not understand, while aspiring surgeons were often obliged to do the operations themselves, in order, through an expensive experience, to master the details.

This evil, we are glad to say, seems about to be removed. At a recent meeting of the Chicago Gynecological Society DR. CHARLES T. PARKES reported thirty laparotomies that had been performed at the clinic of the Presbyterian Hospital, in the amphitheatre, during the past two winters. The list of organs operated upon included the liver, pancreas, stomach, kidneys, uterus, ovaries and Fallopian tubes; yet only four deaths were recorded. DR. HENRY BYFORD reported ten laparotomies performed in the amphitheatre of St. Luke's Hospital, before the regular clinical class, during the past three winter sessions, of which all recovered. DR. GOODELL has also reported a number of such operations in Philadelphia during the past two winters, with the best of results. In the discussion the natural antiseptic powers of the peritoneum were enlarged upon, they being considered sufficient to counteract the danger of air infection under all ordinary circumstances. Dr. Parkes called attention to the fact that all possible precautions had been taken to avoid contact infection, either from the patient's parts or from the assistants, and to this he attributed his success. The explanation was very timely, since reports of this character taken in connection with the avowed abandonment of antiseptics by some others, might lead many inexperienced operators to belittle the dangers of sepsis.

Indeed, it is this very error that will be counterbalanced by such clinics. In no other way can the average medical student study so well the details of preparation and management as by seeing the patient and hearing them frequently repeated at the operating table; neither can he otherwise appreciate the vast difference between the simple and complicated operations, recognize the extreme care necessary in all cases, acquire a knowledge of the difficulties likely to arise, and learn what the peritoneal cavity will tolerate and what not, just how to leave the wound with regard to drainage, ligatures, tampons, etc. It prepares him to recognize the conditions and indications in practice, gives him a preliminary training to a subsequent post-graduate course, and points out the straight and narrow road to success in abdominal surgery.

If further experience shall demonstrate the comparative safety of laparotomy in the amphitheatre, an open door will more and more invite to the clinics those who desire thus to profit from practical demonstrations.

THE GERMICIDAL ACTION OF THE BODY FLUIDS.

One of the principal difficulties in the way of the acceptance of the Listerian doctrine in regard to surgical infection has always been the fact that wounds, even when of considerable extent, may heal witout any evidence of the omnipresent bacteria, notwithstanding the absence of all antiseptic precautions. It is true that the results in this respect are seldom so perfect as when antiseptic treatment has been successfully applied. A little redness and swelling along the line of union, a few drops of pus around the stitches, are seldom wanting. Still, the fact remains that inflammation may, in such cases, be entirely absent. HUNTER distinguished between what he termed healing by first intention, in which, the surfaces being brought into perfect apposition, direct union took place between them without inflammation, and healing by adhesive

inflammation, in which as he believed, on account of imperfect contact, the surfaces were united by a layer of "coagulable lymph." The distinction has been rather generally lost sight of by surgeons, and it has been customary to class all wounds healing without suppuration together as cases of union by first intention. Paget, however, in his "Surgical Pathology," discusses the whole subject very fully, classing the two sets of cases as "immediate union" and "primary adhesion" respectively. Even supposing, what does not seem probable, that wounds which heal by immediate union have escaped contamination, those which heal with inflammatory symptoms present at least equally great difficulties, as it is not easy to see why the process, once initiated, should ever come to an end.

It has been customary to account for such facts as these by the hypothesis, which seems probable enough, that the living tissues have a power of resisting the attacks of microörganisms. This view, satisfactory as far as it goes, is still rather vague, and, granting its correctnees, the *modus operandi* has not, hitherto, been discovered. It must, therefore, be regarded as a welcome addition to our knowledge that recent investigations go to show that the fluids of the body, in their fresh state, not only present an unfavorable soil for some, at least, of the pathogenic organisms, but possess a certain degree of antiseptic power. Nutall appears to have been the first to discover that fresh blood serum is fatal to many forms of bacteria. His observations have been confirmed and extended by others. It appears that the blood-serum of various animals is deadly, in different degrees, to the anthrax, cholera and typhoid bacilli, but not to the staphylococcus pyogenes aureus,—the most common excitant of suppurative inflammation. This property is lost in time; it is destroyed by heating to a temperature of 55° C. (121 F.), is diminished or abolished by a solution of the red corpuscles, and is due to the albuminoid constituents of the serum.

Dr. T. Mitchell Prudden, in the *Medical Record*, January 25, 1890, gives the results of some experiments of his own, with a synopsis of the literature of the subject. His experiments, made with cultures of the typhoid bacillus and staphylococcus pyogenes aureus in the blood of various animals confirmed the results of previous investigators mentioned above. In addition he found that similar properties were shown by fresh ascitic and hydrocele fluids; the liquor amnii of the pig, on the contrary, proved to be an excellent culture medium for the typhoid bacillus.

The staphylococcus in Dr. Prudden's experiments, seemed to be affected in much the same way by the ascitic and hydrocele fluids as by distilled water. In most cases the numbers were diminished to a certain extent, and the increase, where there was any, was slight. This would seem to show that such fluids, although not fatal to the pus-producing organism, are not, in the fresh state, as has heretofore been supposed, favorable to its growth, and would thus explain the absence of suppuration in wounds in which apposition is so close as to allow union to take place before the exudation has had time to stagnate. So long as the bacteria can be kept inactive, it is probably of little consequence whether they are living or dead.

THE ANATOMY BILL IN THE DISTRICT OF COLUMBIA.

It is a matter of surprise that a body of men as intelligent and as worthy of respect as is the American Congress should, until this hour, make demands of the medical profession, the fulfilment of which involves the commission of crime.

Over the signature of the Hon. Wm. C. Endicott, Secretary of War, we have as one of the requirements, on the part of persons desirous of entering the Medical Corps of the U. S. Army, "*the performance of surgical operations upon the cadaver.*"

Over that of the Hon. William C. Whitney, Secretary of the Navy, one of the prerequisites to admission to the Naval Medical Corps is that of "*surgical operations upon the cadaver.*"

Supervising Surgeon-General Hamilton of the U. S. Marine-Hospital Service in this connection says: "I would not consider any man qualified to practice medicine or surgery, who has not dissected the usual number of bodies required by the regulations of our medical colleges." And yet, to-day, in the District of Columbia, to provide the material necessary for such demonstrations is a felony. Such inconsistency needs only to be properly brought to the consideration of that intelligent body, to secure from Congress the legislation which justice demands.

In the language of PROFESSOR A. F. A. KING, Dean of the Medical Department of Columbian University, "the experience for centuries in Europe and many years of experience in a considerable number of the States of the Union, have amply demonstrated that suitable legislation, such as is contemplated in the pending bill, will meet the required demands."

In at least sixteen of the United States, laws have been enacted, providing for the delivery of unclaimed dead bodies to the medical colleges for dissection, and yet in the District of Columbia, there is no legal sanction for the study of anatomy.

It is obvious that if in the metropolis of the nation the study of medicine is to be encouraged, such legislation as the Bill now before Congress contemplates must be had. Not only is it needed, that justice to the medical profession may be done, but because the most sacred interests of the people are still more involved.

There is no disguising the fact that, in the absence of statutory law, every grave within the District is imperiled, while the passage of this Bill will grant to every grave protection. We sincerely hope that the Bill will soon become a law.

WHERE IGNORANCE IS BLISS, 'TIS FOLLY TO BE WISE.

Is this the logical conclusion which we are compelled to receive as the deliberate deliverance of the august Senate of the Empire State, in this year of our Lord, 1890?

Is ignorance at a premium in New York? In the survival of the fittest does illiteracy need protection? Evidently the promoters of this repeal have an eye to revenue, and it may be that this is a tariff, or rather "free trade," for revenue only.

The Act of 1889 requires intending medical students to satisfy examiners under the authority of the State Regents, of their preliminary education, in *Arithmetic*, *Grammar*, *Geography*, *Orthography*, *American History*, *English Composition*, and the elements of *Natural Philosophy*. And could anything be more reasonable than that a medical intendent should be thus far qualified to enter upon the study of his profession?

Now comes the pronouncement of this sage body of Legislators, that this amount of preliminary education is too much to be required of any man, and they propose its repeal. We deeply sympathize with those noble men of the great State of New York, in that their efforts through many years to promote and to elevate the standard of medicine in that State, should meet with such result, and that they should suffer the humiliation which the rescinding of the present law necessitates. It is to be hoped that in the Lower House better counsels will prevail, and that the Governor of the State will not be called upon to sign a bill rescinding the very Act which by his signature became operative two years ago. We sincerely hope that in the near future the promoters of this retrograde movement may be clearly pointed out, and the animus of their action be laid bare.

Let the other States move steadily and strongly on in the grand work of advancing the standard of medical education, and we have faith to believe that the good sense of her people will hold that grand old State, in which, hitherto, it was our pride to have been born, firmly to the purpose of medical reform, and that in the end in nothing will she be found behind the chiefest.

EDITORIAL NOTES.

HOME.

PROF. GEORGE H. ROHÉ has been appointed to the honorable and responsible position of Commissioner of Health for the City of Baltimore. He will bring to the accomplishment of his work experience, culture, and rare executive power. The city is to be congratulated for this selection.

PRECAUTIONS AGAINST FIRE IN HOSPITALS.—The disastrous conflagration which befell the Presbyterian Hospital in New York, has had this compensation that it has stimulated the authorities of some of the older hospitals to an inspection of their fire-escape provisions. A systematic fire-drill has been put in practice in the case of some of them, and other precautions have been devised to prevent a loss of life in the emergency of a fire. The construction of not a few of these institutions has been faulty from their inception, from an apparent ignoring of the possibility of such an accident.

ADDRESSES OF THE SECRETARIES.—As inquiries are frequently made for the names and

addresses of Secretaries of various Sections, we again publish the list:

Practice of Medicine.—Dr. H. McColl, Lapeer, Mich.

Surgery and Anatomy.—Dr. Jno. Blair Deaver, 120 South Eighteenth street, Philadelphia, Pa.

Obstetrics and Diseases of Women.—Dr. Joseph Hoffman, 126 W. Diamond St., Philadelphia, Pa.

State Medicine.—Dr. S. Bascom, Salt Lake City, Utah.

Ophthalmology.—Dr. E. J. Gardiner, 70 Monroe street, Chicago, Ill.

Laryngology and Otology.—Dr. Frank H. Potter, Buffalo, N. Y.

Diseases of Children.—Dr. E. F. Brush, Mount Vernon, N. Y.

Medical Jurisprudence.—Dr. T. D. Crothers, Hartford, Conn.

Dermatology and Syphilography.—Dr. Wm. T. Corlett, Cleveland, Ohio.

Oral and Dental Surgery.—Dr. E. S. Talbot, 125 State street, Chicago, Ill."

The oldest surviving medical graduate of the University of Pennsylvania is said, by the *Medical News*, to be Dr. James Kitchen, of Philadelphia. He was graduated in the class of 1822, when he was 22 years of age. He is now in his 90th year, and has been sixty-eight years in the practice of his profession.

The Thirty-third Annual Meeting of the Medical Association of Missouri will be held at Excelsior Springs, Clay Co. Mo., May 6, 7, and 8, 1890. L. I. Mathews, President; I. C. Mulhall and Joseph Sharp, Secretaries.

The Committee on Arrangements confidently expects to get reduced railroad rates from all points in Missouri and Eastern Kansas, and will publish the particulars in the April numbers of the medical journals of the State, and The Journal of the American Medical Association. "The Elms" will charge $2 a day, and can entertain four hundred guests. Rooms in cottages can also be had at reasonable rates. Although the meeting of the American Medical Association at Nashville, May 20, necessitated the change of time to May 6, 7 and 8, 1890, the meeting at Excelsior Springs promises to be one of the pleasantest and most profitable ever held by the Association. One admirable feature will be that their wives and families may accompany the members and share in their amusement and recreation.

The South-Western Ohio Medical Society under the Presidency of Dr. Read L. Bell, will hold its semi-annual meeting at Springfield, O., on Thursday and Friday, April 17 and 18. A goodly number of excellent papers are announced, and the sessions promise to be of marked interest. All regular physicians in that section of the State are cordially invited.

National Association of Railway Surgeons.—We desire again to call attention to the fact that this Association will hold its next annual meeting in Kansas City, Mo., on May 1, and will be in session three days. The meeting promises to be one of special interest, and a full attendance is anticipated. Dr. J. H. Duncan, of Kansas City is Chairman of the Committee of Arrangements.

State Medical Society of Arkansas.—The Fifteenth Annual Meeting will be held at Little Rock, Ark., Wednesday, Thursday and Friday, May 14, 15, and 16, 1890. The preliminary circular with its lists of Committees is published, and a meeting of medical interest is anticipated. The President is Dr. Zaphney Orto, of Pine Bluff. The Secretary is Dr. L. P. Gibson, of Little Rock.

Meetings of State Medical Societies.—The annual meetings of State Medical Societies to be held during the month of April are announced as follows:

Alabama, Birmingham, April 8; Florida, Ocala, April 8; Tennessee, Memphis, April 8; California, Los Angeles, April 15; Georgia, Brunswick, April 16; Iowa, Des Moines, April 16; Mississippi, Jackson, April 21; Maryland, Baltimore, April 22; Texas, Fort Worth, April 22; South Carolina, Laurens, April 30.

Those to be held during the month of May are as follows:

Illinois, Chicago, May 6; Kansas, Salina, May 13; Louisiana, Baton Rouge, May 13; Nebraska, Beatrice, May 13; Arkansas, Little Rock, May 14; Indiana, Indianapolis, May 14; Kentucky, Henderson, May 14; Washington, Spokane Falls, May 14; Michigan, Grand Rapids, May 20; Missouri, Excelsior Springs, May 20; North Carolina, Oxford, May 27; Connecticut, New Haven, May 28.

TOPICS OF THE WEEK.

REPEAL BY THE NEW YORK SENATE OF THE BILL REQUIRING PRELIMINARY EDUCATION OF MEDICAL STUDENTS.

The following from the pen of a distinguished member of another profession, Hon. St. Clair McKelway, recently a guest of the New York State Medical Society at Albany and then, as on other occasions, an outspoken advocate of higher medicine, deserves the serious consideration of every member of the profession of medicine in the United States, especially on the eve of the annual meeting of its greatest representative body, the American Medical Association, which may well make it its business to inquire how far the allegation is true that medical schools are themselves the instigators of the repeal of the Act requiring the examination of intending medical students as to their fitness to undertake the study of a profound science like medicine, before that Act has been a year in force:

A BILL TO ALLY ILLITERACY AND MEDICINE.

A bill has lately passed the State Senate to repeal the Act of July 13, 1889, requiring intending medical students, in advance of their entrance upon their medical studies, to undergo the examination in academic studies conducted by the State Board of Regents. Without such a law there would be few or no restrictions upon anyone becoming or trying to become a physician. All that would be necessary would be attendance upon a lecturing course or two and the securing of a diploma of graduation from medical colleges, which have a money interest in fees in corraling and passing as many students as possible. The law which it is proposed to repeal requires a fair degree of elementary knowledge of intending medical students. It creates a standard for entrance into the studies of the profession, and it bars from entrance into the profession such as cannot conform to the standard. It is a partial protection of the public from medical ignorance, graduated incompetency and licensed quackery. The motive of the Act was undoubtedly excellent. In actual operation for less than a year, the law has certainly produced no results to bring it into condemnation, and has probably not produced a sufficient number of results to determine its full capacity for good. Less than a year is too short a time for an experiment in statutes to be summed favorably or unfavorably. It should have a longer life to enable final judgment intelligently to be passed upon it. Any allegation, therefore, that the law has been a failure, or that it has yet been a great success, would be unfounded because premature.

No one, however, need be at a loss to explain why a bill repealing it has passed the Senate. The law interferes with the revenues of the fee schools, ambitiously known as medical colleges. It tends to check the number of ignoraut and incompetent persons who desire to become or be called doctors. It correspondingly threatens the loss of tuition and graduation fees to such fee schools. It creates in them an interest for the repeal of the law, irrespective of the benefit which an improved standard of knowledge and culture amoug students for medical degrees would confer upon the community. A banded pecuniary interest, directly contrary to the safety and welfare of society, and moved in the name of the schools of a profession which insists on being called a learned profession, has thus been able to carry a repeal of this measure through the Senate of the State and to send the repeal bill to the State Assembly.

The repeal bill is the first step backward which the State of New York or any other State has ever taken in any reform which had been once established, whether Civil Service Reform, Prison Reform, Charities Reform, Ballot Reform, Canal Reform, Labor Reform or any other reform of a public character. Should the Assembly and the Governor concur in the repeal of this measure of medical educational reform, the instance would be as exceptional as it would be signal in the history of remedical legislation in the history of any civilized or presumably civilized Government of men upon the face of the earth. It is hard to believe that the repeal bill can pass the Assembly. The attention of the enlightened press has been directed to the action of the State Senate. The comments of such press have been deservedly severe and alarming. Even if the Assembly should pass the measure, the Governor could hardly, with consistency, sign the repeal bill, because he himself signed the law of which the repeal is thus sought. The progress or the arrest of the progress of this reactionary bit of legislation will be watched with much interest by the enlightened citizens of New York.

Two or three things should be borne in mind with regard to this measure; it applies to intending medical students exactly the provisions which have been applied to *intending law students for the last seven years.* The application of these methods to law students did not originate with the Legislature. It originated with the Court of Appeals of the State. That court found that the bar of the State was being invaded by hordes of ignorant and incompetent applicants, who contemplated under the sanctions of law, the hideous moral burglary of breaking into the profession. The Court of Appeals, therefore, erected this barrier to the invasion of the bar by grasping illiteracy and required that the Board of Regents, through its officers, should become the examiners of intending law students. Since that was done the moral, mental and social standard of the bar has been much bettered. Collectively the men who have become lawyers within the last seven years are of a higher intellectual and moral type than any collectively considered that became lawyers within an equal period of time preceding 1883. Neither the bar nor the courts would on any account now consent to the abrogation of the requiremens then established.

The chartered schools of the so-called medical profession, however, in less than a year after the establishment of a like provision for intending medical students, have induced the State Senate to vote the repeal of such a provision. It must be that the State Senate acted without knowledge or intention of the consequences of what they did when they voted the repeal the other day. Such a plea would not be predicable of the State Assembly, for the effect of the action would have been made plain to

the members of that body as well as to the Governor, before the one or the other could deal finally with it. The Board of Regents are required by law to become the examiners of intending law students and also of intending medical students. That Board did not seek the honor or the responsibility. Its own ordinary and emergent duties are all that it desired to perform and afforded a sufficient employment for its energies. It, however, accepted the new duties obediently and has sought to carry them out in good faith.

Nor is the Board contending for the retention of these duties, nor is the Board extremely concerned whether they are retained or repealed. The matter is not a Board of Regents one, but a State of New York one, and if the legislative representatives of the people, with the Governor, prefer to throw down the barriers against the admission of ignorance into the medical professon that is their business, and theirs alone. The Board would be relieved of an onerous addition to its ordinary work by such a course and the consequences of the alliance of medicine and surgery with rank illiteracy would rest upon the people of the State and not upon the agents designated to establish and enforce a standard of competency and knowledge.

What ignorance and incompetency have done for the medical profession in America some public events have recently disclosed. The announcement has been made that the medical colleges in Germany, the world's centre of the highest medical education, have refused to accept the diplomas of the medical colleges in the United States, because those diplomas can be commanded hy persons whose want of knowledge, fitness and culture is so great that they are utterly unqualified for the trusts of the healing art. This disclosure coincides with the endeavor of representatives of American medical colleges, an endeavor put forth at Albany, to perpetuate the conditions favorable to illiteracy and incompetency in medicine and to negative the efforts of the State to increase the standard of entrance into the profession. The news from Europe was mortifying enough the other day. The news from Albany, justifying the attitude of the German schools toward those of America, is even more mortifying still.—Editorial in *Brooklyn Eagle*.

MEDICAL SOCIETIES.

The next annual meeting of the American Medical Association will be held in Nashville, May 20—23. This gathering is looked forward to with very deep interest, as one that is likely to be of great importance to the entire medical profession of this country; for notwithstanding the echoes that every once in a while tingle in our ears of the shortcomings and supposed failure of purpose of this society, its work, if we take a clear retrospect of the past and contemplate, has been superbly grand. For nearly half a century it has been the great balance-wheel that has regulated in a most efficient manner the standard of professional intercourse among many thousand physicians. Since the date of its organization there has scarcely been a medical society, from the great State organizations to the little company of five or six assembling in an obscure hamlet or village, that has not, as a prerequisite to membership, required a subscription to an endorsement and acceptance of the code of ethics adopted by the American Medical Association. Thousands and thousands of these men never once attended its meetings, but unhesitatingly in this manner did a creditable act, and practically brought honor to themselves, in subscribing to a professional code that bound them to observances of the strictest integrity in their intercourse with one another and with the people among whom they sought a professional career. In these years, when this wonderland was filling up with people, and increasing from little more than a score of millions to a nation of more than sixty millions of inhabitants, the American Medical Association has gone on from year to year as the one only great representative organization of general as well as special practitioners of medicine.

Under its encouraging auspices and stimulation medical education has kept pace with the long and ever-increasing strides made by those who engaged in scientific investigations, until the course of study demanded by nearly all medical colleges will compare most favorably with that given in any land. Carping critics have ever been ready to herald information of the little value of American medical college diplomas, and say they were obtained cheaply. Our very great desire is that all such doctors be required to pass a green-room examination in any medical college in this or any of our prominent cities. The process would produce a change of heart and opinion that would be as lasting as life itself.

Never have we been so favorably impressed with medical college work as this past winter and spring. This has been largely due to the evident careful preparatory education that was manifest among the young men, while personal inquiry revealed the fact that a large majority of the students had pursued a collegiate course of literary and scientific study before taking up their medical studies. The moral, intellectual and professional influence of these young men locating here and there throughout the country cannot be overestimated, and nowhere will their influence be found more potent than in the local medical societies with which they will at once become identified.

Within the past year we have noted the premium at which youth was held in our professional societies. But a few years since young men were given to understand that a retiring modesty in demeanor and utterance was becoming and in harmony with their lack of experience. The present marks a wonderful contrast. Young men are expected to come forward and take a front seat, and are encouraged to write elaborate papers on the results of their investigations and cultures.

Right here we want to say that the young man who hesitates to take up the challenge to show the depth and quality of the gray matter that is beneath his scalp and skull-cap is lost. There is no such thing as a stand-still; he must keep up with the procession, and if he can only get there, the going is very much easier and pleasanter in the front than in the middle or rear rank. The best way in the world to keep out of a crowd is to get right before it.

Spirts in society work don't do half as well as a good pace with staying qualities.

One of the reasons for the marvelous results in the proceedings of the American Medical Association has been its wonderful staying ability. A carefully thought out scheme, patiently but enthusiastically adhered to, is certain in the accomplishment of its purpose.

Unity of purpose with completeness of organization produces an *esprit de corps* that has made some societies famous. This has been the tidal wave that has carried forward the great specialty societies, and given their work a world-wide reputation. Some local organizations just boom right along because of the energy and wisdom of their management.

The physician—be he old or young—who fails to identify himself with a local and State society is the man who is being left. He may not be cognizant of it, but all the same it is a fact; and some day, when circumstances oblige him to rub the sand out of his eyes, the lone and forlorn condition of his existence will strike him with all the glare of a noonday sun in the middle of the heated term. A painful dizziness will sicken him for the time, as he makes a struggling effort to comprehend the links that are missing from his chain of wisdom, that he had supposed were perfectly forged by his old teachers when he sat on the benches.

Sometimes this vertigo may be relieved by a personal union with a live society. This is the only known remedy—the only hope. If you are not a member, make haste and "jine the band."—Editorial, *Cincinnati Lancet-Clinic.*

PRACTICAL NOTES.

WASHING OUT THE BLADDER.

In a recent work by D. J. M. Lavaux, he strongly recommends the practice of washing out the bladder by means of hydrostatic pressure, instead of by the action of the syringe. The plan he adopts is similar to that used in what is well known in this country as the "fountain syringe."

He employs a reservoir fixed at a certain height above the patient, and connected by india-rubber tubing, not with a catheter, but with a metallic tube only three centimeters (about an inch) long. The tube fits into a conical, perforated india-rubber obturator, which is introduced within the urethal orifice. The stream of water is then turned on, and a force sufficient to overcome "the inter-urethral" sphincter being employed, the fluid passes on into the bladder. As soon as a feeling of distension is experienced by the patient, the flow is stopped, and the obturator is removed, and the patient empties the bladder by his own effort. The stream of water is regulated by means of a difference in caliber of the short urethral tubes, of which there are six sizes, the smallest having a channel of one millimeter and a third in diameter, and the largest three millimeters. The force of the water flowing through each of the tubes with reservoir at a given height has been calculated, and one size or another is selected according to the sensibility of the bladder, and the resistance of the sphincter in each case.

This plan of injection is said to be applicable to all kinds of cystitis in both sexes, and to be especially useful in painful forms of the affection, in which the introduction of a catheter causes so much pain and irritation. It is also equally applicable for maintaining an aseptic condition of the urinary passages in cases of operation, the essential condition in any case being that the patient should be able to empty the bladder voluntarily. The solutions used by Dr. Lavaux usually contain boric acid or nitrate of silver, varying in strength according to the case. The use of these medicated solutions is preceded or followed by injection of a solution of cocaine whenever the use of that drug is indicated.

Those of our readers who have never adopted this method of introducing liquids into the bladder will be surprised, on attempting it, to find how much may be accomplished by it, and how much suffering it will spare their patients. Not only is this true, but the method offers much greater freedom from risk of septic infection than any which requires the use of a catheter.—*Med. and Surg. Reporter.*

TREATING INFECTIOUS DISEASES.

M. Letulle proposes that the following regulations should be adopted in hospitals, and by doctors treating infectious diseases. Every patient brought to the hospital suffering from a contagious affection should be immediately placed in an isolated ward, so that all contact between infectious cases and surgical cases should be avoided. The clothing of each patient should be disinfected on his arrival at the hospital. A hot bath and subsequent cleansing with a solution of corrosive sublimate at 1 in 1,000 should be practiced. The hospital furniture should be made of iron and easily taken to pieces, so that it may be disinfected at the departure of each patient. The different rooms should be thoroughly aired and disinfected, and all cases of contagious disease isolated. In his hospital practice the physician should avoid importing or carrying away any morbid germ. He should therefore wear a blouse in the wards and disinfect his clothes daily. The same rules apply to his private practice when he has cases of contagious affections to attend.—Paris Corr. *British Medical Journal.*

KAPOSI'S REMEDY FOR WARTS.

Kaposi recommends the treatment of warts by solution of the bichloride of mercury, one part, in flexible collodion, thirty parts. This solution should be applied with a brush once daily to the wart itself, and around its base.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association—The Immateriality of Life and of Disease—A Case of Extra-uterine Pregnancy—The Saturday and Sunday Hospital Collections.

The March Meeting of the New York County Medical Association was one of the largest in the history of the Association. Dr. James R. Leaming, the well-known authority on diseases of the chest, read a philosophical paper on "The Immateriality of Life and of Disease," in which he expressed views on pathology considerably at variance with those commonly accepted at the present day, and somewhat startled his hearers by his skepticism as to the causative agency of morbific microbes.

In speaking of phthisis he stated that in his opinion the bacilli found to be present simply fed on the dead atoms found in the tissues like mold on decaying matter, and that he did not believe they were the cause, but the consequence of the pathological process. In confirmation of his position he referred to his own person. He said that he had been born with an inherited tendency to phthisis, and that at the age of twenty he had had a severe attack of pleuritic trouble, from the consequences of which he was still suffering. For ten years he had attended regularly at the department for diseases of the heart and lungs at the Demilt Dispensary, and that during all this time, with but one interval of three months, he was constantly in the closest contact with tuberculous patients in making his examinations; so that he must inevitably have received quantities of the bacilli into his system. Yet, notwithstanding his exposure here and elsewhere to the so-called germs of the disease, he had been steadily growing out of his natural tendency to phthisis. Furthermore, it had been admitted by the bacteriologists that the bacilli could not be cultivated in a healthy organism.

These views were controverted by Drs. Carroll, Biggs, and others who took part in the discussion of the paper, and the former said that as scientific knowledge increased it was constantly being found that affections of the true pathological nature of which we were formerly entirely ignorant (as, for instance, general paresis) had very definite material lesions; and he had no doubt whatever that every abnormal condition, whether it was classed among functional disorders or not, was accompanied by certain tissue changes, though the latter might be of only a temporary character. A mental impression might be the exciting cause of the trouble, but as a result of this changes in the innervation and vascular supply of certain parts, with consequent disturbances of the system, occurred.

Dr. Biggs, who is favorably known in connection with his scientific work at the Carnegie Laboratory, also said that the more we learned about the pathology of various diseases, the more material they seemed to become. Dr. Leaming, however, seemed to disregard all the advances of the last few years; considering the bacilli merely as concomitant factors and the jeavengus (?), rather than the cause, of disease. At the present time he thought it was hardly worth while to review the argument for the causative agency of these microbes, as everyone was already so familar with the various points. It was now simply a question of the acceptance or rejection of the proof of such causative agency; and Dr. Leaming had not appeared to him to advance any proof of the correctness of his own position. All diseases were recognized now as the result of absorption of energy from external sources, and it seemed conclusive, therefore, that they were material in nature.

At the close of the discussion Dr. A. Palmer Dudley read the report of a case, with specimen, of extra-uterine pregnancy. The patient was 41 years old and had been married twice. By the first husband she had had five children, and since her second marriage she had been pregnant twice, but had miscarried both times. In the latter part of May last her menses should have appeared, but did not, and nausea of a troublesome character supervened. Milk appeared in the breasts, and the latter increased in size. She complained of some pain and sense of heat in the right side, and considered herself pregnant. This condition of affairs continued until July 10, when she had a slight rush of blood from the vagina, and from that date she had each day a slight flow of blood until the 23d. On that morning she felt very miserable and had some pain in the right side, but she kept about the house, and while lifting a small trunk she was suddenly seized with a frightful pain in the right side and back, and was soon in collapse. The nature of the case was not recognized, and she was given stimulants and kept in bed. She continued to suffer great pain and some flow of blood from the vagina, and evidences of localized peritonitis were present. On August 1, while still in bed, she was seized with another attack of intense pain, and in a few moments was in such profound collapse that she was thought to be dying. After a time, however, she rallied. This attack was followed by severe peritonitis, but this also yielded to treatment, and she once more improved in strength.

Dr. Dudley first saw her, in consultation with her family physician, on the 22d of August, and he was able to readily make out what he considered an extra-uterine pregnancy occupying the

right half of the pelvis, pushing the uterus towards the left side, and also extending up the right side to midway between the pubes and umbilicus. It was his opinion that the sac had ruptured at the time of the sudden pain and collapse, and that the peritonitis had supervened as a result of rupture. He advised an immediate operation for removal of the sac, but no decidua had been discovered and the mass seemed to merge into the uterus.

The patient was then removed to the hospital, and the day after this she passed a large quantity of membranes. This positively confirmed the diagnosis and decided the question of immediate operation. On August 27 he made an abdominal section sufficiently large to introduce his hand. The omentum and small intestines were found to be one mass of adherent tissues, and were also firmly attached to the abdominal walls, the fundus of the uterus and the bladder. On breaking through these adhesions a considerable quantity of dark clotted blood appeared, and the fœtus was then found to have escaped from the anterior side of the tube and to be lying between the bladder and the cæcum. The placenta was attached to the posterior part of the tube and the broad ligament, and occupied the entire right half of the pelvic cavity. The fœtus was readily removed, but the attempt to remove the placenta was at once attended by a profuse hæmorrhage. This was arrested by long clamp forceps applied to the broad ligament, and the ovary and tube with its placenta were then quickly torn from their attachments in the cul-de-sac and lifted through the incision. Not as much bleeding followed this as was expected. The pedicle was ligated with silk, cut short, touched with pure carbolic acid, and dropped back. The abdominal and pelvic cavities were thoroughly washed out several times with very hot water, and then sponged thoroughly dry. The left ovary and tube were lifted up and inspected and, being found healthy, were dropped back. The abdominal incision was then closed with catgut and silk sutures. No drainage tube was used.

The patient rallied well from the operation. With the exception of an abscess in the abdominal wall to the left of the incision, nothing occurred to mar the progress of her recovery, and at the present time, seven months after the operation, she is perfectly well. Her last menstruation was in the latter part of April. She must have been about three months pregnant when the sac ruptured, and the fœtus had evidently lain in the abdominal cavity nearly a month when removed.

Dr. Dudley said that as far as he was able to judge, the weight of evidence at the present time is in favor of a radical operation as soon as the diagnosis can be made out. The points upon which he said he would invite discussion were these:

1. How early is it possible for us to make a diagnosis of ectopic gestation with any degree of certainty?

2. Is there any positive sign to guide us in making a diagnosis except the appearance of a decidual membrane?

3. When a diagnosis can be made with reasonable certainty should we delay, or operate at once?

4. Should a drainage tube be used after operating?

Dr. Wm. T. Lusk said the points mentioned by Dr. Dudley were the very ones about which obstetric surgeons were most in doubt. He had himself recently reported two cases of laparotomy, but they had both been performed after rupture. In either of them it would have been impossible under ordinary circumstances to make a diagnosis before rupture. It was true that in one of them the patient had experienced some little pain, but it was only such as is often met with in normal pregnancy. He had in the last few years changed his views very considerably on this subject, and he now believed that the number of cases in which we could diagnosticate extra-uterine pregnancy in advance was really very small. The trouble was that formerly we did not at all appreciate how extremely common these cases of extra-uterine pregnancy really are. There were a certain number of them in which the diagnosis was comparatively easy; the fœtus getting down between the folds of the broad ligament. In such cases the use of the Faradic current had proved successful in nearly all the instances in which it had been employed. He did not mean to say, however, that he might not resort to laparotomy in such a case himself. This operation, when performed under favorable circumstances, was not ordinarily attended with any great amount of danger; but unless all the recognized appliances for its successful performance were at hand and unless the operator was accustomed to this kind of work, laparotomy was now just as fatal as it ever was. He did not think it was right, therefore, to decry the use of electricity in such cases; and he had certainly often seen this means of treatment attended with the most favorable results.

In conclusion, Dr. Lusk mentioned a case which he said he believed was of a character not previously reported in this Association or in this city. The patient had been sent to him by Dr. Biggs, and he performed laparotomy. The tumor was in the left iliac fossa, and he dissected it out and found blood clots in the tube. There could be little doubt that this was originally a tubal pregnancy; but it had been converted into a blood-sac. It was apparently a case of so-called tubal abortion.

Dr. Joseph E. Janvrin, President of the New York Obstetrical Society, said that Dr. Dudley's was a secondary operation, performed after he was perfectly aware that rupture of the tube had

taken place. As to the questions he had propounded, of all the symptoms which went to make up the diagnosis, expulsion of decidua was the only absolute sign. The diagnosis had, however, been made as early as the seventh or eighth week without the evidence of decidua. Four or five years ago he had reported such a case to the American Gynecological Society, and since then other cases had been reported. We had the usual symptoms of pregnancy, and in addition there was at the side of the uterus a semi-elastic tumor, which was exquisitely tender to the touch, and which felt like a distended tube. The presence of such a tumor, added to the ordinary signs of pregnancy, would, he thought, enable us to make a positive diagnosis of ectopic gestation.

As to the results of the treatment by galvanism, in one case in which he had employed it there had been a partial rupture, and the patient had died in consequence of this not later than the ninth week. When the condition which he had described presented itself, he would not hesitate for a moment to open the abdomen and discover what the actual condition of affairs was. Almost the only thing that could be present, if there was no extra-uterine pregnancy, would be disease of the tube, such as pyosalpinx or hydrosalpinx; and if the latter were found when the abdomen was opened, the operation would be abundantly justified. He was perfectly willing to grant all that had been claimed for galvanism in the past; but, being reasonably sure of our status, what was after all the best thing to do? In his opinion laparotomy was decidedly the better procedure, for there was certainly disease present, if extra-uterine pregnancy did not exist.

As to the use of the drainage tube, this must be left entirely to the surgeon, who would be guided by the existing circumstances in each individual case. In some cases it certainly seemed advisable to use this, at least for a time. One other point. The fact that patients suffering from tubal pregnancy were frequently seized with colicky pains before the end of the second month (which pains might result in collapse), did not necessarily imply rupture of the sac. There might be only slight injury to the latter, but this partial laceration was often sufficient to produce profound collapse. As to the class of cases referred to by Dr. Lusk, which developed down in the broad ligament and separated the muscular structures, these usually went on pretty well to the sixth or seventh month. When the fœtus was extracted from the tube the symptoms were generally so characteristic that any experienced observer could recognize the condition without trouble. Laparotomy was here the only thing to be done, and there could be no question whatever as to its propriety.

In closing the discussion Dr. Dudley said that he believed with Dr. Janvrin that it was possible to make the diagnosis quite early, especially if we had existing together a certain class of symptoms similar to those met with in the case which he had reported. He did not believe, however, that it was possible to make an absolutely positive diagnosis until the decidua appeared. Still, without this we could make a diagnosis sufficient to warrant either the use of electricity or a resort to laparotomy. There was one point to which he desired to call attention, and that was that the placenta may continue to increase in size after the death of the fœtus, as had unquestionably been the case in this instance. With regard to electricity, while this means of treatment might destroy the fœtus, it would not *cure* the woman. It would not reopen the tube, and there therefore remained a diseased condition. When laparotomy was performed, however, everything was removed and no such focus of irritation remained in the pelvis afterward.

With respect to the drainage tube, he said that it had been his practice never to use this in any case unless there was free pus present. He had employed it in only two cases out of about seventy, and both of these died. In the case which he had reported this evening no drainage tube was used, and he thought that the omission to do so was justified by the result obtained. He believed in the use of electricity to stop the development of the fœtus, but at the same time thought that most of the cases would come to laparotomy afterward. In experienced hands and performed with all the requisite precautions, he did not think laparotomy any more dangerous than electricity.

The Saturday and Sunday hospital collection was larger this season than ever before, amounting to $57,000, and it has now been distributed to the various institutions entitled to a share in the fund.

It is very gratifying to learn that the bill which provides for the removal of the pauper insane from the county poorhouses to first-class State asylums has passed the lower house of the Legislature, and that it is likely to pass the Senate also. For two or three years the friends of this long hoped for reform have been striving with all their energy to get such a bill through the Legislature, and it has been a hard struggle between enlightenment and public spirit on the one hand, and ignorance and avarice on the other.

In the face of the facts brought forward in the admirable address of Dr. Jacobson on "Homœopathy and Medical Progress," which was published in The Journal of March 25, it is certainly to be wondered at that at the recent meeting of the Medical Society of the State of New York the President, Dr. Daniel Lewis, in his annual address, should have gravely recommended that the principles and practice of homœopathy should be regularly taught as a part of the curriculum of our medical colleges. P. B. P.

Extraction of a Key from the Trachea.

To the Editor:—On the evening of February 14, 1890, Carl Blohm, aged 2 years, was brought to my office by his father, who stated that the boy had "swallowed" a key a few moments before. The patient was voiceless, dyspnœa was constant and alarming, and there was a frequent croupy cough. There was great retraction of the soft parts about the clavicles and in the inframammary regions in inspiration. It was very evident that the foreign body was somewhere in the air passages, and it seemed to me probable that it had not passed much below the larynx, as I could on no other theory account for the complete aphonia. However, neither with the finger nor with a pair of laryngeal forceps was I able to reach it through the mouth. It was plain that relief, to be of avail, must be speedy. Accordingly, after ineffectually trying a vigorous shaking with the patient inverted, I proceeded to perform tracheotomy under chloroform anæsthesia. The operation just above the isthmus of the thyroid was chosen, and in making the incision in the trachea I was so fortunate as to come directly upon the lower and smaller end of the offending key; and now came the part of the affair that seemed to me to be of peculiar interest. The key, or at least the large end of it, was so much wider than the diameter of the trachea that with the ordinary laryngeal forceps I was wholly unable to remove it from its position, as the blades of the instrument would slip off at every effort to grasp and remove the foreign body. It was only by taking a stout pair of polypus forceps that I was enabled to extract it. The key was of steel and measured 30 millimetres in length and at the widest part 13 millimetres in width. I have not been able to find in any authority accessible to me a table of the diameters of the trachea at different ages, but I am confident that in this patient it did not exceed 7½ or 8 millimetres. Relief to respiration was perfect, and as soon as the little fellow regained consciousness he audibly expressed his satisfaction with the result, as I held my finger over the tracheal opening to enable him to use his vocal organs. No tube was used, as I could see no indication for it, and the incision was allowed to close, which it did inside of forty-eight hours. A pretty severe bronchopneumonia came on on the second day and lasted four or five days. The patient is now practically well.

M. G. Sloan, M.D.

Dexter, Iowa, March 1, 1890.

The McKinley Tariff Bill has some features that will interest medical men. It allows the importation free of books and pamphlets printed in any language but the English, and of periodicals in all languages. Opium is put upon the free list.

ASSOCIATION NEWS.

American Medical Association, Forty-First Annual Meeting.

Section of Obstetrics and Diseases of Women.

The following list embraces the titles of papers that have been offered to this Section to April 1.

1. "Intra-Ligamentary Cysts," by W. H. Wathen, Louisville, Ky.
2. "Primary and Ultimate Results of Vaginal Hysterectomy for Cancer," by Charles A. L. Reed, Cincinnati, Ohio.
3. Title not announced, Rufus B. Hall, Cincinnati, Ohio.
4. "Gonorrhœal Disease of the Uterine Appendages," by J. M. Baldy, Philadelphia, Pa.
5. "A Plea for Early Vaginal Hysterectomy in Cancer of the Uterus," by Franklin H. Martin, Chicago, Ill.
6. "A Retrospect of Pelvic Surgery," by Joseph Price, Philadelphia, Pa.
7. "The Treatment in Placenta Prævia," by Aug. P. Clarke, Cambridge, Mass.
8. "Moot Points in the Doctrine of Placenta Prævia," by W. W. Jaggard, Chicago, Ill.
9. "The Treatment of Placenta Prævia, based on an Experience of Thirty-four Cases," by G. H. Balleray, Paterson, N. J.
10. "She Supposed it was Her Change of Life," by A. Vander Veer, Albany, N. Y.
11. Title not announced, by J. H. Kellogg, Battle Creek, Mich.
12. "A Résumé of the Ideas of Paul Portal's Pratique des Accouchments," by John Bartlett, Chicago, Ill.
13. "Psychical Results of Gynecological Operations," by I. S. Stone, Lincoln, Va.
14. "Stricture of the Urethra in Women," by Ely Van de Warker, Syracuse, N. Y.
15. Title not announced, by John B. Deaver, Philadelphia, Pa.
16. Title not announced, by C. B. Penrose, Philadelphia, Pa.
17. "Antiseptics in Obstetrics," by T. B. Greenby, West Point, Ky.
18. "Hyperemesis Gravidarum," by E. W. Mitchell, Cincinnati, O.
19. "Uterus Bilocularis," by L. H. Dunning, Indianapolis, Ind.
20. "The Great Utility of Bleeding in Puerperal Convulsions," by John G. Meacham, Racine, Wis.
21. Title not announced, by Wm. E. Ashton, Philadelphia, Pa.
22. "A Plea for the General Adoption of the Traction Forceps," by Joseph Hoffman, Philadelphia, Pa.
23. "Surgical Treatment of Non-Pedunculated Abdominal Tumors," by Henry O. Marcy, Boston, Mass.

24. "Extra-Uterine Pregnancy, with Cases," by E. E. Montgomery, Philadelphia, Pa.

25. "Laparotomy for the Purpose of Restoring the Functions of the Tubes and Ovaries," by William M. Polk, New York N. Y.

26. "Abdominal Section; its Practical Success," by R. Stansbury Sutton, Pittsburgh, Pa.

27. "The Intra-Peritoneal Ligature," by L. S. McMurtry, Louisville, Ky.

28. "A New Operation for the Relief of Prolapse of the Anterior Vaginal Wall," by Andrew F. Currier, New York, N. Y.

29. "Diseases of the Female Pelvic Organs, and when to Operate by Abdominal Section," by M. B. Ward, Topeka, Kansas.

This list is made up in the order of the reception of the titles; the papers will be grouped by subjects as near as possible for the meeting. Authors whose titles are not announced are requested to send them to the Chairman without delay.

Wm. Warren Potter, M.D.,
Chairman.

Joseph Hoffman, M.D., *Secretary.*

INTERNATIONAL MEDICAL CONGRESS.

Tenth International Medical Congress, to be held in Berlin, August 4 to 9.

The Committee of Organization of the Tenth International Medical Congress, R. Virchow, *President*; E. von Bergmann, E. Leyden, W. Waldeyer, *Vice-Presidents;* O. Lassar, *Secretary-General*, have appointed the undersigned members of an American Committee for the purpose of enlisting the sympathy and coöperation of the American profession.

We are assured that the medical men of our country will receive a hearty welcome in Berlin. The Congress promises to prove of inestimable value in its educational results, and in securing the ties of international professional brotherhood. It is most important that the American profession should participate both in its labors and fruits.

Delegates of American Medical Societies and Institutions, and individual members of the profession, will be admitted on equal terms. The undersigned, therefore, beg to express their hope that a large number of the distinguished men of our country will appreciate both the honor conferred by this cordial invitation and the opportunity afforded us to fitly represent American medicine.

The Congress will be held at Berlin, from the 4th to the 9th of August.

The arrangements in regard to a few general meetings and the main scientific work, which is delegated to the Sections, are the same as in former sessions. A medico-scientific exhibition, the programme of which has been published a few weeks ago, is to form an ingredient part. It is to the latter that the Berlin Committee is very anxious that both the scientific and the secular press should be requested to give the greatest possible publicity.

The office of the Secretary-General is Karlstrasse 19, N. W., Berlin, Germany.

S. C. Busey, Washington, D. C.; Wm. H. Draper, New York City; R. H. Fitz, Boston, Mass.; H. Hun, Albany, N. Y.; A. Jacobi, New York City; Wm. T. Lusk, New York City; Wm. Osler, Boston, Mass.; Wm. Pepper, Philadelphia, Pa.; J. Peyer Porcher, Charleston, S. C.; J. Stewart, Montreal, Can.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U.S. Army, from March 29, 1890, to April 4, 1890.

By direction of the Secretary of War, Capt. Henry P. Birmingham, Asst. Surgeon, is relieved from station at Ft. Klamatk, Ore., and from temporary duty at Vancouver Bks., Washington, and will report in person to the commanding officer, Boise Bks., Idaho, for duty at that post. Par. 6, S. O. 72, A. G. O., Washington, March 27, 1890.

First Lieut. Charles F. Mason, Asst. Surgeon, is granted leave of absence for two months, to take effect on or about April 15, 1890, by direction of the Secretary of War. Par. 3, S. O. 76, A. G. O., Washington, April 1, 1890.

Capt. Marcus E. Taylor, Asst. Surgeon, leave of absence for one month granted by par. 3, S. O. 26 c. s., Hdqrs. Dept. of the Columbia, is hereby extended one month, on surgeon's certificate of disability. Par. 1, S. O. 19, Div. of the Pacific, March 27, 1890.

By direction of the Secretary of War, a board of medical officers, to consist of Col. Edward P. Vollum, Surgeon; Major George M. Sternberg, Surgeon; Major Henry McElderry, Surgeon; Capt. John J. Cochran, Asst. Surgeon; is constituted to meet in New York City on the 28th day of April, 1890, or as soon thereafter as practicable, for the examination of Asst. Surgeons for promotion and of candidates for admission into the Medical Corps of the Army. The board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General. Par. 6, S. O. 78, A. G. O., April 3, 1890.

Capt. J. O. Skinner, Asst. Surgeon U. S. A. (Ft. Ontario, N. Y.), is hereby granted leave of absence for one month, the leave to commence forthwith, as his services may be required with troops to change station early in May. Par. 5, S. O. 75, Div. of the Atlantic, April 2, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 4, 1890.

Surgeon N. McP. Ferebee, ordered to the U. S. S. "Essex."

P. A. Surgeon Frank Anderson, detached from the U. S. S. "Dolphin" and ordered home.

P. A. Surgeon S. H. Griffith, detached from the Museum of Hygiene and ordered to the U. S. S. "Dolphin."

P. A. Surgeon A. C. Heffenger, ordered to temporary duty at Navy Yard, Portsmouth, N. H.

Surgeon Manly H. Simons, ordered to superintend repairs at Widows Island Hospital, in addition to present duties.

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ORIGINAL ARTICLES.

CANCER OF THE LARYNX.—REPORTS OF TWO CASES.

Read by title in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY H. A. JOHNSON, M.D.,
OF CHICAGO, ILL.

Two years ago I reported to the American Laryngological Association five cases of cancer of the larynx. The subject has engaged the attention of the profession since to a greater degree than before, and the history of the disease has become more fully known. The question as to what to do with a cancer of the larynx has not, however, been made any more evident. The exaggerated tendency to operation in all cases of surgical troubles, largely the result of, first, the use of anæsthesia, and, second, from the discovery and application of antiseptic methods and agents, has led the profession to consider lightly the dangers of operation and, consequently, to resort to them in cases in which the conditions justifying an operation are as yet perhaps not sufficiently known. At any rate, the question of extirpation of the larynx cannot be considered as beyond the experimental stage. The study of a larger number of cases is necessary in order to enable one to formulate the indications in any given instance.

The history of a case celebrated more on account of the exalted position of the patient than for any especial facts in its course or termination has led to much additional discussion as to the management of this affection. As a contribution to the history of the disease I beg to report to the Section the brief notes of two cases that have come under my observation within the last year.

Case 6 of my series.—M. B. S., æt. 55 years; male; married and the father of several children; of regular habits, and always in good health till the advent of the present trouble. Consulted me in August, 1888, for a "sore throat." I had known him for many years, but had not been his physician. A brother had died a few months before from some malignant disease—a sarcoma, as I understood. His father and mother lived to old age, and no other members of the family have had any malignant or tubercular trouble.

There was no evidence of any specific trouble. He had never had any severe illness, has not been subject to sore throat or to colds, and up to July, 1887, has had nothing to attract his attention to the throat. About that time, however, he began to experience, at times, some discomfort in talking; his voice began to be husky, not all of the time, but at intervals. He attributed this to cold and did nothing for it, or only used such domestic remedies as were suggested by the family. The huskiness continued, and in the December following he consulted a physician. There was at that time some soreness of the larynx. The examination disclosed what was pronounced to be an ulceration of the larynx. I am unable to learn whether or not a laryngoscope was used in this examination. A spray was used, and he thought his condition was improved. During the spring and summer the trouble, however, grew worse, and for the last sixty days—June and July, 1888, he has had, after exercising or in wet weather, some dyspnœa, and the voice has been entirely extinct. During all this time there has been no actual pain, but a sense of discomfort; there has been cough at times, but not troublesome. The appetite has been good, no difficulty in swallowing, and as he expresses it, he "feels first-rate."

I find, upon external examination, that the cartilages are prominent, symmetrical, movable, and not tender upon pressure or manipulation. The pharynx is red and the secretions are excessive in quantity. There is no change in the structure of the parts. The epiglottis is at its edges well defined and its form normal. The vestibule of the glottis is filled with a growth, especially at the anterior portion, which admits of only sufficient air to meet the demands of the system in a state of rest. The vocal bands could be seen only with difficulty in their cartilaginous portions; subsequently, after the use of cocaine, the cords were seen as narrow whitish bands throughout their entire length. The opening through the vestibule of the larynx was narrow, the walls roughened, and both sides were so nearly alike that it was impossible to say that the tumor was involved one side more than the

other. The posterior portions of the larynx seemed not to be seriously, if at all, implicated.

I was in doubt as to the diagnosis and placed him upon potassium iodide and mercuric iodide. I also applied to the parts, with an atomizer, a solution of iodine in liquid cosmoline. There seemed for a time to be some improvement, but soon the dyspnœa evidently became worse, especially in damp weather, and occasionally in the night during sleep. He had been living in the country, and as a matter of precaution now came into the city, so as to be within reach should tracheotomy be necessary. The potassium iodide was not well borne, and was discontinued. It was on two occasions afterwards tried, but each time it evidently did not act kindly; there was, after a few days, decided loss of strength and impairment of nutrition. Local treatment by means of sprays and vapors was continued, astringents, iodine, carbolic acid, etc. These seemed to give some temporary comfort, but no permanent benefit. In the meantime external observations made it evident that the size of the organ was increasing, and that the enlargement was nearly symmetrical. The question of extirpation was raised, but before any definite opinion was reached tracheotomy became necessary.

Early on the 9th of November he was seized with a paroxysm of dyspnœa, and seemed to be moribund before the operation was completed, though the rapid method was employed. Artificial respiration was kept up for some time. A split Fuller's tube was inserted for convenience in the hurry of the moment, and this was after a few hours replaced by the ordinary form, which, however, was not easily retained, and a Durham tube was substituted. This was worn with great comfort during the remainder of life.

An accident which occurred in the use of this tube I venture to mention. About three weeks after the operation the swelling of the external tissues had subsided and I loosened the collar of the tube, with the thought of shortening the transverse portion—in other words, of bringing the collar down close upon the surface, so as to prevent undue pressure against the posterior wall of the trachea. I loosened the collar by turning the set screw. I concluded, however, not to make the change for the present, and tightened, as I had supposed, the binding screw. During the evening a severe fit of coughing came on and the nurse telephoned me that the patient had coughed out the tube. I at once hurried to the bedside and found the bands around the neck in place, with the collar of the tube over the tracheal opening, while the nurse had in her hand the inner tube, which had been, by a violent cough, thrown to the foot of the bed; the outer tube was nowhere to be found. I carefully examined the opening into the trachea; could see well the tracheal walls, but no tube. The patient breathed easily and, in answer to my questions, said he felt no discomfort; no cough. Upon further questioning the nurse I found that after cleansing the inner tube she attempted to introduce it, but did not succeed. She saw the outer tube in place before trying to introduce it, but could not see it afterwards. My patient was not in the least incommoded by a large size Durham tube, evidently resting somewhere in the respiratory tract. With a long probe I searched for it and found its upper end about two inches below the tracheal opening. With a pair of Mackenzie's laryngeal forceps I was able to seize the tube and extract it. It evidently did not come up as easily as it went down. The old proverb, "*facilis descensus*," etc. No harm came from it, but I at once made a flange on the upper end of the outer tube, so that it should be impossible for the accident to occur again.

During the whole history of the case there was but little pain. For the first few weeks after the operation the cough was troublesome and the expectoration muco-purulent. Later the expectoration was small in amount and mucous. There was at no time, or until the last day or two, difficulty in swallowing liquids, and only during the last few weeks difficulty in swallowing solids. There was no swelling of the lymphatics, so far as could be determined by careful palpation before or after death. The post mortem examination was limited to a section through the larynx, permitting an examination of the posterior walls of the trachea and larynx, and of the œsophagus. The latter was healthy, and the posterior portion of the larynx was involved only to a limited extent. The trachea below the canula was not ulcerated and presented the ordinary appearance of catarrhal inflammation. Evidently no injury had been done by the mechanical pressure of the tube. A section from the anterior portion of the larynx, including the cartilages, membranes and superficial tissues, was removed, and, upon microscopic examination, presented all the characteristics of carcinoma.

The death of the patient was from asthenia. There was no evidence of secondary carcinoma anywhere. For the two weeks preceding death there was frequent small pulse, Cheyne-Stokes respiration, anorexia and insomnolence.

Soon after the tracheotomy Dr. E. Fletcher Ingals saw him with me in consultation, and the question was again raised as to the propriety of extirpation. We neither of us thought the operation advisable. A peculiar feature of this case is the development from within anteriorly, leaving the posterior walls of the organ nearly or quite intact.

Of the five cases reported to the Laryngological Association by the author, all experienced difficulty in deglutition.

It is of course impossible now to say what was

the initial lesion, but the first symptom was hoarseness. So far as I know there was no laryngoscopic examination made at that time. The patient supposed it to be only a cold; afterwards a physician diagnosed it as ulceration of the larynx, but I was unable to ascertain whether or not a laryngoscopic examination was then made. The transformation of benignant to malignant growths does without question take place elsewhere, and it is possible that the beginning may have been a papilloma; but I conjecture that the origin must have been in the glandular tissue of the ventricles on the vocal cords. The symmetrical development of the growth is, I think, unusual, and I hardly know how to account for it except upon the hypothesis of both ventricles or cords having been invaded about the same time.

The propriety of extirpation, complete or partial, will probably be judged differently by different members of the Association. In view of the statistics of carcinoma and of operations for extirpation, I confess I do not think it likely that life would have been prolonged by extirpation; and yet it belongs to the class of cases in which an operation is usually justifiable.

1. The patient was a male over 50.
2. A brother died from sarcoma or carcinoma.
3. The disease was primary carcinoma.
4. It was intrinsic.
5. It involved the anterior portion of the larynx and was symmetrical.
6. There was dyspnœa early, but no dysphagia till near the termination; then not marked.
7. The lymphatics were not involved.
8. There were no secondary developments.
9. Death was from asthenia.
10. The duration of the disease from the first symptoms was about twenty-one months.
11. The duration after tracheotomy was five months.

An additional case of cancer of the larynx has come under my observation within the last few months.

Case 7 of my series.—M., æt. 53; German; office work; family history good. During last year there was occasional hoarseness lasting a few days each time. For the last few months these attacks have recurred oftener, and for the last two months the hoarseness has been nearly constant. There has been slight difficulty in swallowing solids; particles lodge in the throat and cause cough; no soreness or pain with this. A small lump (deep upper cervical lymphatic ganglion) developed; is not tender and does not increase in size. The salivary secretions are excessive; the voice is whispering, broken; appetite poor; has lost 25 pounds in weight within the last two or three months; attributes this to difficulty in swallowing foods. There is now some dyspnœa. Examination reveals an irregular, ragged growth upon the posterior surface of the epiglottis and the right and posterior walls of the supraglottic space. The extreme border of the epiglottis is swollen and livid, but its form is not lost. The tumor bleeds upon the slightest provocation; even the effort to phonate produces bleeding. Nothing can be seen of the right vocal cord, and only a small segment of the middle portion of the left during phonation.

A second examination about two weeks later revealed no material change, except that there was upon the surface of the growth an ulceration grayish in color and bathed with pus. The lymphatic enlargement had somewhat increased, and the salivary secretion and dysphagia was more marked and troublesome.

The question of an operation is raised. The implication of the lymphatics seems to me to contra-indicate it.

With the five cases heretofore reported the summary of the histories is as follows:

1. All of the seven cases were males.
2. The youngest 45, the oldest 72 years.
3. In four of the cases the growth was from the right side, in one case from the left side, in one case symmetrical and anterior, and in one case probably from the left side.
4. In cases 5 and 6 there was a history of cancer; in case 5 the mother of the patient, and in case 6 a brother.
5. In one case only did the laryngeal disease appear to be secondary.
6. In two cases the lymphatics became involved, and in these two cases there was great tendency to hæmorrhage.
7. In no case was there marked pain in the larynx.
8. In four cases tracheotomy was performed.
9. Four cases should be classed as extrinsic and three cases as intrinsic.
10. The duration of life was: Two cases, 24 months; one case, 21 months; one case, 18 months; one case, 17 months; one case, 14 months; one case not yet determined.

CONCLUSIONS.

1. An intrinsic cancer, localized, with no enlargement of the lymphatics, should be operated upon as soon as its malignant character is determined.
2. An extrinsic cancer with enlargement of the lymphatics should not be operated upon.
3. Intrinsic cancers of the larynx are less likely to infect the system than extrinsic cancers.
4. Intrinsic cancers produce death by interfering with respiration; extrinsic cancers by general infection, but more especially by interfering with nutrition.

Of course there must be many cases of a mixed character. The progress of the disease from within outwards or from without inwards may take place rapidly, and when first seen it will be often impossible to determine the origin except

by the order of the disturbances of function, as of respiration, or of deglutition. If dysphonia or dyspnœa have preceded dysphagia, we may conclude that the disease has been in its beginning intrinsic. If the difficulty of swallowing has been the first or a very early and prominent symptom, the disease has been extrinsic.

SHORT NOTES ON THE SURGICAL DISEASES OF CHILDREN.

Read in the Section of Diseases of Children, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY EDWARD BORCK, A.M., M.D.,
OF ST. LOUIS, MO.

What little I have to communicate upon the surgical diseases of children is based upon personal practical observation. It may not contain any very new information, but as we are all interested, it will add at least something to our collective treasure of knowledge and experience. As such I offer the following remarks, leaving out all theory, criticism and quotations.

I. CONGENITAL.

Hare Lip.—For a single, simple hare lip, after having tried the various methods known, I operate now with the object of not losing or destroying any tissue if possible to prevent it. I insert a very fine needle knife and pierce through the lower margin of one corner of the lip, sweeping the knife around to the opposite corner, thus leaving a complete and continuous bridge between the two parts of the lips. (See Fig. 1; dotted line indicates the incision.) I then pull it down (see Fig. 2), unite the wound with three or four fine cambric needles deeply inserted. Upon the needles a small piece of cork is put upon each side (see Fig. 3), a single figure-of-8 ligature to



FIGURE 1.

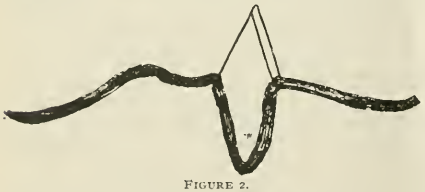


FIGURE 2.

hold it in its place: the whole is penciled over with flexible collodion. In youths or adults I use small glass beads instead of cork, two or three on each needle. If swelling should occur I can break one or more beads and thus relieve the tension. I prefer to operate as soon as possible; the earlier the better for the unfortunate creature, and the better the success for the surgeon. The advantage of this plan is that the cork as well as the glass does not irritate the skin, and if any swelling should occur the ligature can be loosened without risk of separating the wound. The cork retracts slowly and enough to correct this swelling. Not dividing the lower margin in twins nor sacrificing any tissue, leaves me a complete natural bridge, a great advantage in cases where union by first intention is not obtained. It also fills up the gap better. The objections that one may raise who never has tried this plan may be

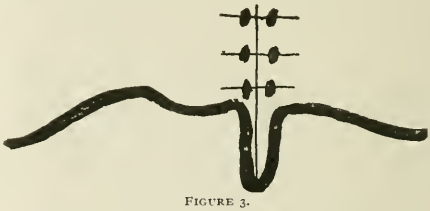


FIGURE 3.

that it leaves a pendulum or a flap hanging down, but if you have patience and wait, that which at first may seem a little unsightly to the eye, will in a few mouths disappear, so to say, it will be appropriated or absorbed by the surrounding tissue. If, however, there remains a small protrusion, it can easily be removed with the knife to suit the case, and a much better result is obtained. In double, simple harelip, I operate on one side at a time. After a perfect or complete healing of the first, I operate on the second.

In simple, complete harelip running into the nostrils, I operate in a similar way, paring the edges according to circumstances, let the flap hang down and remove the superfluous portions, if any, some time after union has taken place.

Hypertrophy of Tonsils.—I have seen no permanent cure from any treatment whatsoever, except the complete extirpation of the tonsils, which is, to my mind, the only safe treatment. Sometimes a temporary relief may be obtained by other remedies; but generally we find ourselves disappointed. I prefer to take out all of the gland, or as much as possible, either of one or both, as circumstances demand. The slicing off of a small piece only, and depending upon the remaining portion becoming smaller by atrophy, has been to me a disappointment. I have not observed impotency in adults who have had their tonsils removed in childhood. I know a few whose tonsils I removed when they were children; they grew up and were married, and their wives had children, and the offspring had all or most of the "ear-marks" of the tonsilless father; and I know more than one girl whose tonsils I removed that

grew up, married, and became the mother of children.

Phimosis—Circumcision.—The frequency with which one meets with this affection, and its many different degrees, is remarkable; indeed, so remarkable that the question may be asked, what is really considered a perfect, natural prepuce? I would answer, whenever the prepuce is so formed that the opening is sufficient to uncover the gland, or at least the greater part of it. And now I would ask, with how many such formed cases have you met? I have met very few that presented this condition. I observed closely every case when I was engaged in a pretty large obstetrical practice as a general practitioner years ago; admitting, however, that I operated comparatively seldom during that period, and then only in the most urgent cases, letting the greater part remain undisturbed, as many other practitioners have done, and do now. What the beneficial or detrimental result of thus leaving to nature had, in after life, in each and every case, I can not tell; but I do know that in some of the cases which I did not operate on, I had an opportunity to correct, for some cause or another, this deformity during their childhood, or later during their manhood.

To the question, when and how is the operation to be performed, my answer would be, to the first: whenever indicated, and as early as recognized. To the second, operate in such a manner as to accomplish the purpose well for which you operate. Every case stands upon its own merits; no one certain operation, no one certain method, answers in each and every case. Good judgment must be used in each separate case; and the kind of operation or method of operation indicated for each case should be separately selected, for the promiscuous slicing off of a piece of the prepuce, and clumsily done, may produce an evil as great or greater than the one which we aim to correct. I am guided by the following, and operate accordingly: If the prepuce is very small, the prepuce not too long, I make a simple incision with the knife upon the dorsal side, sufficient to uncover the gland completely, and in the majority of such cases a small, or comparatively small, incision will accomplish the object satisfactorily. In cases where the prepuce is extraordinarily long, with either a small or large opening, I prefer circumcision, removing more or less, as the case may require. I use a flat forceps, made out of German silver, which I hand around for your inspection. You will observe that it has a channel which is intended for the knife to pass through. The prepuce is grasped with the forceps and the knife slides through the channel. I use ligatures occasionally and occasionally operate without ligatures, as the case may demand. I take plenty of time, and try with the utmost care to make the operation as neat as possible, and to leave a handsome and nice penis so that the operation may be a credit to the surgeon, the member may be a benefit and comfort to the patient and that others may derive pleasure therefrom. I need not mention all the defects and ailments for which this operation is recommended, as relief or prevention; neither will I speak of the mischief that may be done by an imprudent operation; it would take up too much time. I only wish to call attention to this important observation, that in cases where there is but a small opening in the prepuce and the prepuce is short, the gland is not uncovered or has never been uncovered until maturity, there the gland is always very small and atrophied, the penis is not well developed, is oftentimes very short and then unseemingly so in comparison with the other parts of the body.

I operated upon a young, handsome, well developed married man, the son of a physician, who had congenital phimosis, and who presented the above picture, and who informed me, like many others, that he never could enjoy the act of coitus; that erections were always accompanied with pain, almost to distress. He had no children. Circumcision relieved the gentleman; in time the penis was better developed and his family increased also.

II.—ACQUIRED.

Under the head of fractures and dislocations, I will state that I find the latter as a rule easily reduced, and kept in place; not often followed by unpleasant sequelæ, with the exception of dislocation of the head of the radius, which is the most difficult bone to replace in its proper position, and if success accompanies the attempt, it is as difficult to keep it there. The reasons why are obvious.

I would also call your attention to my method of reducing dislocation of the vertebræ by suspending the patient by the head. (See case reported in *Med. and Surg. Reporter*, Philadelphia, Pennsylvania, January 31, 1885, Vol. 52, No. 5.)

Fractures, I treat in the most simple manner. My observation has been that the more play and freedom you allow the little patient the better the result; that confinement of any kind does not suit children—it produces forced resistance and mischief. For instance, I treat fractures of the femur with a simple, single paste board splint, extending it from the crest of the ilium to below the knee; using a bandage and starch, employing no extension or counter extension; I leave the child alone upon a good mattress. After union has taken place I cut off the lower part of the splint a little above the knee so as to make a short femur splint, and again allow the little creatures the free use of their limbs. I am not afraid they will abuse it.

In fracture of the radius near the carpal joint,

the best result has been obtained by me with the straight splint upon the flexor side, from the elbow to the metacarpo-phalangeal joint, fingers free. After union has taken place, a light paste board splint is applied over the radial side for a short time for safety's sake, and free use of the arm and hand is permitted.

The Epiphyses.—Separation af the epiphyses—I mean hereby fracture—I see much more frequently in late years than formerly, in all shapes and forms, at all stages. Sometimes directly after the injury has occurred; at other times weeks, months, and years afterwards. My observation has taught me that separation of the epiphyses of the humerus and femur are the most frequent, and no matter at what time the injury is recognized, or how carefully it is treated, the results are never very satisfactory. The separated epiphysis is partly or completely absorbed and therefore has only partial or no union at all, and the limb will have a dangling motion, though time may improve the usefulness of the limb, but the patient never recovers as well as after a fracture in other parts of the bone.

Hip Disease.—In the second stage of hip disease—that is the stage of effusion, we have among other symptoms, great pain. If the case goes from bad to worse—that is from the second to the third stage, suppuration takes place, and as soon as the capsule is perforated the pain ceases. I have therefore been led in several cases, to open the capsule by a subcutaneous incision during the second stage, with the most gratifying results. By this means I let the fluid run into the surrounding tissues to be absorbed by nature. The pain ceases immediately, the patient is then put in as comfortable a position as possible; the limb is easily straightened by manipulation. The best method that I have employed is to put the patient upon a pair of wire breeches. No forced extension is employed. I will say that aspiration as a curative method has failed in my hands.

Extension and Counter-Extension, employed upon the fanciful theory that thereby the head of the femur is separated from the acetabulum is useless. In a healthy joint it cannot be done. The two surfaces are in such close relation—move upon one another so accurately, that there is no room; the vacuum is small indeed and the joint hermetically sealed, therefore it can not be pulled asunder. Separation of these two surfaces can only take place when disease has destroyed the ligaments and the capsule is opened.

Club-Foot.—I do not think that we surgeons up to the present time have accomplished all that might be accomplished for the successful treatment of club-foot, notwithstanding all the modern improvements for the treatment and cure of the various kinds of club-foot. There is not a single method ever so much praised, that will answer for all cases belonging to one or the other class of club-foot. There is no apparatus that will answer for all cases. Each case requires a careful study and though several cases may present the same features, each separate picture may be produced by a different cause, consequently the treatment applied to one case may not answer for the other. Has not every surgeon seen cases of club-foot successfully treated by one or another method, and has not every surgeon seen the same case so successfully treated by him fall into a relapse again after a time? Most certainly. Then what is the cause of these relapses? Has the fault been with our diagnosis or with our treatment? That is the question to be answered. Now it may be with one or the other or it may be both; or there may be something else, which as yet we do not know, but certain it is that these relapses do occur over and over again, and more often than we are willing to admit. I think that success greatly depends on the diagnosis—a careful diagnosis between the physiological club-foot and congenital pathological club-foot of the infant is of the utmost importance, the first of which, according to my observation, every infant possess in a greater or less degree, and which is always corrected as soon as the child begins to walk, and these are the cases that the child will outgrow. Now if the apparent deformity of the physiological club-foot is subjected to the treatment of a congenital pathological club-foot, then surely there will be some mischief produced; and a permanent deformity will remain in the future, for when the child begins to walk, then the deformity will be increased and it has to be corrected over again. Again, if a congenital pathological club-foot is looked upon as a natural physiological position of the foot and left to itself to outgrow, we will be sadly disappointed again, for the deformity, if not corrected early, will increase rapidly and fearfully as soon as the child begins to use its feet in walking. It is more difficult then to correct the same; the more advanced the case, the more severe treatment it takes. If no treatment is instituted the case grows worse and worse until at last no kind of treatment will correct the error. A correct diagnosis and as early a treatment as possible is essential for success. Different forms of treatment are required for the different forms of congenital or acquired club-foot. For example, to try to cure a club-foot or genu valgus, which was caused by congenital paralysis, by complicated mechanical appliances would be in vain; and it would be useless to attempt to correct such a deformity by the operation of tenotomy, osteotomy and so forth; it would not alone be a failure, but a discredit to the surgeon. I pursue no one method for all cases. I adapt my treatment to each individual case and am well satisfied with the general results I have obtained.

Tracheotomy.—This operation is an unthankful one. Out of eight cases during this year, I have lost seven; one of them died upon the table. It was a child only eight years old, the only daughter, a handsome bright child. All these cases I saw in the last stages of diphtheria or membranous croup, being called merely to perform the operation as a *dernier ressort.* The remaining cases all lived from two to twenty-four hours. They have occupied my mind and I have asked myself the question: What can be the cause of all these fatal terminations? consoling myself at the same time that others have had no better luck. In my seven cases chloroform was administered and the operation done at night by gas or kerosene light. All care was taken by myself and the neccessary attention bestowed at the time and in the after treatment by the watchfulness of the attending family physicians. Now whether the chloroform, or possibly the mixture of the gas or kerosene with the chloroform may have been a factor in these cases I can not determine; but it occupies my mind at present for solution. The eighth case, a child four years old, suffered with membranous croup, the dyspnœa was very great, the patient was almost cyanosed. I operated without chloroform and quickly, on a bright day. This child recovered after careful treatment and attention by the family physician. About twelve years ago, during a season, I performed ten tracheotomies with five recoveries. It has not and may never again repeat itself. Tracheotomy for the removal of foreign bodies hardly ever terminates fatally.

Diseases and Injuries of the Spine, are very interesting studies, and under that head I will only say a few words about what is known as Pott's disease. The principles of the treatment of the trouble, though important, is very well understood, but of the pathology of this affection I think we can still learn a good deal by more close investigation. The question is what is the general cause; this seems even at the present day not quite settled; the opinions are various and a few cannot give up the old inherited theory of scrofulous diathesis. My observation, studies and investigation have taught me that in by far the majority of cases the cause of caries of the spine has been produced by mechanical injury. So with diseases of the joints such as abscesses, etc. The tubercular origin of such has not been and can not be satisfactorily proven; it is only a convenient theory.

Mr. President, there are other interesting topics such as congenital tumors, hernia, spina bifida, etc., but I have already taken my allotted time. One could write a good sized monograph upon every single affection. The points which I have touched upon in this paper were brought forward for the purpose of eliciting discussion upon this interesting field of surgical diseases of children and thereby obtain the views and opinions of others in order that we might listen to the personal observations of the many distinguished gentlemen here present. I should like to have said a few words about laparotomy in children, but will reserve it for another occasion. I thank you for your attention.

STATISTICS OF CONSTITUTIONAL AND DEVELOPMENTAL IRREGULARITIES OF THE JAWS AND TEETH OF NORMAL, IDIOTIC, DEAF AND DUMB, BLIND, AND INSANE PERSONS.

Read in the Section of Oral and Dental Surgery, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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In some papers read before the Odontological Society of Great Britain from 1864 to 1872, the general opinion was expressed that certain marked forms of irregularities of the jaws and teeth prevailed largely among the feeble-minded, and that when found in children they constituted a marked symptom of a low order of mental development. In May, 1864, Mr. Cartright, in a paper entitled "Reflections on the Cause and Treatment of Some Forms of Irregularities," said that irregularity of the teeth "is the result of high and selective breeding." This opinion I have already discussed in a paper read before the Indiana State Dental Society on June 26, 1888, on "Arrest of Development of the Maxillary Bones due to Race-crossing, Climate, and Soil," which was published in *The Dental Cosmos.*

In June, 1864, Mr. Thomas Ballard read a paper before the Odontological Society on "The Constitutional Ill-effects of Fruitless Sucking, and the Diagnostic Value of Deformed Jaws in Relation thereto," in which he claimed that thousands of children die annually of diseases primarily due to fruitless sucking; "but many of the sufferers escape death, and they constitute a class of defective individuals with which all classes of society abound. The worst form is the idiot, and in this class there are many degrees." Again he says: "I hold that the deformities to which I refer," but which he does not mention specifically, "are produced solely by the retained habits of sucking; and it is the children who have been exposed to fruitless sucking and consequent persistent diarrhœa, with its attendant evils, when infants, who acquire the retained habits of sucking, and thus get their jaws deformed. And as in idiots are seen the worst forms of defective growth, so also do they exhibit the most aggravated forms of deformed jaws and teeth, the habits of sucking being

retained by them to an advanced age. So also are the deformed jaws and teeth commonly to be observed among the ill-grown, phthisical, and the weak and delicate members of society. The normal jaw, with well-set and perfect incisor teeth, is the principal characteristic feature of an individual possessing a sound constitution." I shall show subsequently in this paper that it is not true that idiots present the most aggravated forms of deformed jaws and teeth.

In his work on "Deformities of the Mouth" Mr. Oakley Coles attributes intermaxillary prognathism to a force operating on the intermaxillary bone, such force originating in the body of the sphenoid, and being transmitted by the intervening nasal septum. By *force* he means a direction of growth in a given line, of such energy as to overcome the resistance offered to it by surrounding structures. In regard to the sphenoid bone he says: "It may be urged that too much importance is attached to the influence of the sphenoid, but it must be borne in mind that this bone continues to grow up to about 25 years of age. This will in part explain the fact of deformities of the upper jaw appearing after the eruption and shedding of the temporary teeth, and becoming intensified towards adult life." Arguing back from the development of cases of double hare-lip to premaxillary prognathism, he thinks that we can come to no other conclusion "than that the duration and extent of the force operating upon the intermaxillary bone determines the nature and extent of the deformity that will be produced." He sees the natural objection to this view, that as the prognathism is not pronounced in early life, and as the union of the intermaxillary bones with the true maxillary bones is complete at this time, it is impossible that the intermaxillary bone can be the subject of any subsequent change. But, having shown that "intermaxillary prognathism is but a preliminary step in the deterioration of the form that will produce in a subsequent generation (subjected to like conditions of propagation) double hare-lip," he assumes that the general cranial development will in the two cases bear some relation to each other; and as Hutchinson has shown that in cleft palate cases ossification of the sutures is delayed to a period far beyond the usual date, so in cases of intermaxillary prognathism the sutures would not be so much ossified as to oppose any sufficient resistance to the exercise of the force originating in the sphenoid. He then goes on to say that many cases of prognathism are associated with such central lesions as will manifest themselves in the form of idiocy or imbecility, and distinctly asserts that such a deformity as prognathism occurring amongst the highly civilized is a distinct mark of deterioration of stock. "After carefully examining the works of various writers on the subject of microcephalic idiocy," he says, "there seems sufficient evidence to justify the belief that premature ossification of the sutures is the rule in the majority of these cases; and we may, therefore, assume, if we cannot absolutely conclude, that this influence operates powerfully in the production of the dental deformity known as the lambdoid jaw;" a view held by Virchow, but combated by Ireland and Langdon Down.

Dr. Louis Ottofy, in his paper on "The Incipiency of Dental Caries," read before the joint meeting of the American and Southern Dental Associations at Louisville, on August 30, 1888, reported an examination of the mouths of 623 children—317 males and 306 females. These children were pupils in the public schools at Grand Forks, Dak., Lebanon, Ill., and Chicago. The following table shows the percentage of irregularities:

Age.	Irregular.	Regular.
5	0 per cent.	100 per cent.
6	9 "	91 "
7	27.5 "	72.5 "
8	43 "	57 "
9	14 "	86 "
10	31.5 "	68.5 "
11	32.5 "	67.5 "
12	25 "	75 "
13	20 "	80 "
14	35 "	65 "
15	28 "	72 "

It will be seen that the largest percentage of irregularities is at the age of 8 years. The cuspid teeth are appearing at this time, and at least one-half of the irregularities are due to local causes. At the age of 13 but 20 per cent. of the cases showed deformities; nature and a judicious use of the forceps had corrected many of them. At the age of 15, 28 per cent. of the teeth were irregular. I venture the opinion that if these examinations could have been exteuded to the age of 20 years, the percentage of irregularities would have diminished. The development of the jaws at this age would allow nature to reduce many of these abnormal conditions.

The following table shows examinations of mouths of 1000 children over 12 years of age, made by myself:

TOTAL DEFORMITIES IN THE JAWS OF HEALTHY INDIVIDUALS OVER 12 YEARS OF AGE.

No.	Sex.	Normal.	Large Jaw.	Protrusion lower jaw.	Protrusion upper jaw.	High Arch.	V-shaped Arch.	Irregular V-shaped Arch.	Thumb Sucking.	Saddle-Shaped Arch.	Small Teeth.
396	M.	313	11	3	5	26	5	18		12	13
604	F.	467	8	4	2	30	6	43		21	17
1000	Total	780	19	7	7	56	11	61		33	30
Per cent.		78	1.9	.7	.7	5.6	1.1	6.1		3.3	3.0

The difference between Dr. Ottofy's percentages and those shown in the above table is accounted for by the fact that in his table both local and constitutional causes are included, while in mine the many deformities due to local causes are excluded.

Nearly all of these cases were residents of Chicago, and had been attended by the dentist regularly. These irregularities, therefore, might be classed as constitutional or developmental, as they could not be prevented by the dentist by the use of the forceps. We naturally suppose that the majority of the children examined by Dr. Ottofy, living in the country as they did, had received but little attention from the dentist—which would account for more cases being irregular than among those examined by me. It is possible also that some of those I examined had had slight irregularities corrected while they were young, thus preventing serious complications when maturity was reached. I should expect to find quite a difference in the percentage of irregularities in different parts of the country. When people are confined indoors, and do brain work chiefly, as those living in cities, they are likely to have more irregularities than country people. So also among those living in old parts of the country, as the New Englanders, rather than in residents of a newer part of the country.

The Jaws of Idiots.—Dr. W. W. Ireland has defined idiocy as "Mental deficiency or extreme stupidity depending upon malnutrition or disease of the nerve centres occurring before birth or before the evolution of the mental faculties in childhood." A definition that seems more inclusive, and that more clearly describes the tissues of the body, is the one given by Dr. Shuttleworth: "A vice of the entire organism; an affection not only of the nervous system but of the functions generally of organic life." Not a tissue of the body is exempt; the phenomena that check development of the brain tissue will also interfere with proper development of the other tissues of the body.

No part of the body has received the impress of disease so markedly as the osseous system, and yet pathologists have given this part of the idiotic system but little attention. The osseous system seems to have been constructed regardless of symmetry or uniformity. While in the normal individual the lateral halves are never uniform, in the feeble-minded the greatest asymmetry prevails. This want of harmony is more apparent in the maxillary bones because of their peculiar formation and environment. The close proximity of the jaws and their articulations permits of irregularities being readily observed. At the beginning of my examination I observed that other deformities than the V- and saddle-shaped existed, all of which must be considered. I found both excessive and arrested development of the maxillary bones, arrest of the one and excessive development of the other, protrusion of the upper or lower jaw, high and low vault, partial V and partial saddle-shaped arches, semi-V and semi-saddle-shaped arches, semi-V and semi-saddle-shaped on the same side, and small teeth.

Of late years some American investigators had made examinations among the inmates of our institutions for idiots, and reported that they found about the same proportion of irregularities as may be seen in ordinary practice. The varying opinions among scientific men on either side of the Atlantic led me to investigate the subject carefully. The examinations were made by myself and able dentists in the following named institutions:

Asylum for Idiots of the State of New York, at Syracuse; Massachusetts School for Feeble-minded, at South Boston; Illinois Asylum for Feeble-minded Children, at Lincoln; Asylum for Idiots, Randall's Island, N. Y.; Minnesota Training School for Idiots and Imbeciles, Faribault; Kansas State Asylum for Idiots and Imbeciles, South Winfield; Cook County Insane Asylum, Dunning, Ill.; Pennsylvania Institute for Feeble-minded Children, at Elwyn.[1]

The following tables show the total number of irregularities in each grade and sex:

TOTAL DEFORMITIES IN THE JAWS IN ALL GRADES.

HIGH GRADE.

No.	Sex.	Normal.	Large jaw.	Protrusion lower jaw.	Protrusion upper jaw.	High Arch.	V-Shaped Arch.	Partial V-Shaped Arch.	Thumb Sucking.	Saddle-Shaped Arch.	Small Teeth.
334	M.	190	33	10	36	84	16	44	2	51	16
228	F.	132	14	14	17	57	15	12	5	23	14
562	Total	322	47	24	53	141	31	56	7	74	30
Per cent.		57.2	8 3	4.2	9.4	25	5.5	9.9	1.2	13.1	5.3

MIDDLE GRADE.

434	M.	261	34	19	22	41	25	45	1	33	11
316	F.	195	17	9	18	26	16	46	5	24	12
750	Total	456	51	28	40	67	41	91	6	57	23
Per cent.		60.8	6.8	3.7	5.3	8.9	5.4	10.8	8	7.6	3

LOW GRADE.

271	M.	97	37	23	32	55	33	39	7	37	9
394	F.	220	27	17	34	56	24	50	11	39	9
665	Total	317	64	40	66	111	57	89	18	76	18
Per cent.		47.6	9.6	6	9.9	16.6	8.5	13.3	2.7	11.4	2.7

TOTAL DEFORMITIES IN THE JAWS.

1977		1095	152	92	159	318	129	236	31	207	71
Per cent.		55.3	7.6	4.6	7.9	16	6.5	11.9	1.5	10.4	3.5

The above tables show that almost one-half of the whole number examined had irregularities of the jaws and teeth. The examined were children over 9 years of age. Under that age irregularities might be considered as of local origin, while constitutional and developmental irregularities do not appear until the eruption of the incisors and first permanent molars. As would be expected, the largest percentage of irregularities is found in the low-grade class; and it is seen that the normal class in the high and middle grades vary only about 12 per cent., the middle grade showing the largest percentage of normal jaws

[1] Special reports may be found in the Transactions of the International Medical Congress, 1887, and in the Annual, 1888.

and teeth, the high grade the next, and the low grade the fewest number of normal cases.

The mental capacity of the idiot can indicate in a general way only the abnormal condition of the osseous as well as muscular, venous and arterial systems of the individual; thus, a high-grade idiot might possess an atrophied condition of any of the tissues of the body, while a low-grade idiot might develop any or all of the tissues to an excessive degree, this depending of course upon the inclination and condition of the blood supply. Thus the arterial and nervous systems might be atrophied on one side, lessening the supply of blood to that side or limb, producing atrophy of the muscular and osseous tissues on that side. The opposite effect might be produced on the other side; a large amount of blood would be carried, naturally, to the extremities of the other side, causing hypertrophy of tissue.

If the tissues of the body are so prone to take on abnormal conditions, certainly the jaws must suffer more or less. I have observed three conditions that account for nearly all the irregularities of the jaws and teeth: excessive development, arrest of development, and inharmonious development of the maxillary bones. These abnormalities are developed with the osseous system, and may be properly termed constitutional and developmental.

When excessive development occurs in one jaw and the other is normal, or arrested development ensues, then the teeth in the abnormally large jaw protrude.

If the cranium is large the superior maxilla is usually larger than normal. When the inferior maxilla is involved the rami are as likely to be enlarged as the body of the bone. Sometimes the rami and body develops uniformly. When there is excessive development of a part of all of the bone, protrusion of the lower jaw and teeth takes place. I have seen cases in which one-half of the superior and inferior maxilla, as well as one-half of the cranium was larger than the other.

In these irregularities of the jaws, however, irregularities of each set of teeth are seldom seen. While it is proper to speak of these conditions as irregularities, yet they are so only as one jaw is related to the other.

I have already shown, in a paper read before the Dental Section of the American Medical Association in 1888, that irregularities of the teeth, which I have termed constitutional, prevail to a greater extent among the idiotic, deaf and dumb, and blind than among an equal number of strong and well-developed persons; that not only is the brain matter deficient in the feeble-minded, but that many cases are seen that show that the osseous system is generally defective; and that when the bone tissue is arrested in development from malnutrition, the maxillary bones are affected.

It is frequently the case that when idiocy appears in a family, other members of the family are observed to be scrofulous, deaf, dumb, blind, or insane, showing that the conditions indicating neurotic tendencies have been transmitted through generations. In his work on "Insanity in Norway," Ludwig Dahl gives many instances in which the result of this tendency is deafness, dumbness, or insanity, as often as idiocy. He says: "Acquired insanity and idiocy frequently appear side by side in the same family stock. Deaf-dumbness occurs frequently." He has traced the genealogies of a number of families, and has brought to light a number of interesting facts. In his genealogy of No. 3, the Ejvinds family have nine insane or idiotic, four deaf and dumb, and one epileptic. Other families showed a similar proportion of mentally and physically deformed persons.

In his work on "Idiocy and Imbecility," p. 528, Dr. Ireland says: "Deafness frequently occurs in families where some of the other members are idiots." And again, on page 16: "The children of epiletics are frequently insane or idiotic or hysterical, and the descendants of an insane person are often epileptic, idiotic or insane. Deaf-dumbness, chorea, locomotor ataxia, hysteria, and other disorders of the nervous system now and then occur in the descendants apparently as the result of an inherent neurotic tendency in the family."

In the report of the Commissioner on Idiocy appointed by the Legislature of Connecticut,[1] it was found that out of seventy cases of idiocy there were ten cases of idiotic parents, six insane parents, six insane relatives, eight epileptic parents or relatives, eight blind and two melancholic.

Dr. Howe shows[2] that in seventeen families in Massachusetts, the heads of which were blood relations, there were born ninety-five children, of which forty-four were idiotic, twelve scrofulous and puny, one deaf and one a dwarf. Morel and the school of investigation which he founded point out that the defective classes, *i. e.*, the congenital deaf mute, blind, lunatic, idiotic, criminals and paupers, are buds on the same tree of human degeneracy. In dealing with the evidences of degeneracy they cite defective teeth as one of the signs in most instances. These signs are ativism or reversion to lower types of structure and junctions. Many more cases could be given showing that a relation exists between the deaf, dumb, blind and insane, but it is evident that the offspring of parents showing neurotic tendencies and symptoms are subject to these conditions. Medical men have commonly classified these lesions under the same head; and some

[1] See Report of Commissioners on Idiocy to the General Assembly of Connecticut, New Haven, 1856, p. 35.
[2] On the Causes of Idiocy, Edinburgh, 1858, p. 35.

specialists go so far as to classify the criminal and drunkard in this category.[1] I have recently read an article from a French journal in which a left-handed person was also included.

While specialists have generally concluded that most of these conditions are derived from a common neurotic ancestry, the only common feature is a very low grade of cerebral development. In my investigations concerning the osseous system in its relations to the irregularities of the jaws and teeth, I have observed a lesion common to all these conditions. With this object in view I have made examinations of the mouths of all these classes except the criminal, and these I hope to examine in the near future. I found great difficulty in enlisting sufficient interest on the part of superintendents of Blind Asylums to enable me to make proper examinations of the blind, their reason being that the sensitive nature of the parents would not permit of their exhibiting the mouth for examination. I have made a sufficient number of examinations, however, to make some estimate of the percentage of deformities of the jaws and teeth.

Deaf and Dumb.—The greatest interest has been shown by the superintendents of deaf and dumb institutions, thus enabling me to make very satisfactory examinations. In some of the institutions visited the blind are retained with the deaf and dumb; when such was the case the blind were classed with the deaf and dumb. Examinations were made in the following named institutions; either by myself or by able dentists living in the town or city where the institution was located:

Minnesota School for the Deaf, Faribault; Portland School for the Deaf, Portland, Me.; Oregon School for Deaf Mutes, Salem; Colorado Deaf and Mute Institution, Colorado Springs; New Jersey School for Deaf Mutes, Trenton; South Carolina Institution for the Education of the Deaf, Dumb, and Blind, Clear Springs, S. Ca.; Milwaukee Day School for the Deaf, Milwaukee, Wis.; Washington School for Defective Youth, Vancouver, Washington Terr.; Arkansas Deaf Mute Institution, Little Rock; Iowa Institute for Deaf and Dumb, Council Bluffs; Clark Institute for Deaf Mutes, Northampton, Mass.; Evansville Deaf Mute School, Evansville, Ind.; Institute for the Deaf, Dumb, and Blind, Berkeley, Col.; Kansas Institute for the Deaf and Dumb, Olathe, Kans.; Institute for the Deaf and Dumb, Austin, Texas; Nebraska Institute for the Deaf and Dumb, Omaha; Alabama Institute for the Deaf and Blind, Talledega; Indiana Institute for the Deaf and Dumb, Indianapolis; Western Pennsylvania Institute for the Deaf and Dumb, Pittsburg; Northern N. Y. Institute for Deaf Mutes, Malone, N. Y.

[1] Lombroso has called attention to deformities of the jaws among the born criminals.

The following table shows the results of the examinations of the Deaf and Dumb:

TOTAL DEFORMITIES IN THE JAWS OF THE DEAF AND DUMB

No.	Sex.	Normal.	Large jaw.	Protrusion lower jaw.	Protrusion upper jaw.	High Arch.	V-shaped Arch.	Partial V-shaped Arch	Saddle-shaped Arch.	Small Teeth.	Cleft Palate.
1111	M.	538	197	41	116	241	91	115	108	51	
824	F.	363	108	51	89	177	78	77	95	62	
1935	Total	901	305	92	205	418	169	192	203	113	2
Per cent.		46.5	15.6	4.7	10.5	21.7	8.7	9.9	10.4	5.8	

Examinations were made in the following named institutions for the blind: Institute for the Blind, New York City; Maryland School for the Blind, Baltimore; Maryland School for the Blind and Deaf and Dumb, Baltimore; Kentucky Institute for the Blind, Louisville.

The results of the examinations of the blind are shown in the following tables:

TOTAL DEFORMITIES IN THE JAWS OF THE BLIND.

No.	Sex.	Normal.	Large jaw.	Protrusion lower jaw.	Protrusion upper jaw.	High Arch.	V-shaped Arch.	Partial V-shaped Arch.	Saddle-shaped Arch.	Small Teeth.	Cleft Palate.
107	M.	53	8	9	10	20	4	3	6	7	
100	F.	52	8	7	5	18	3	6	5	3	1
207	Total	105	16	16	15	38	7	9	11	10	1
Per cent.		50.7	7.7	7.7	7.2	18.3	3.3	4.3	5.3	4.8	

In the following table are shown the results of the examinations of the mouths of the insane.

TOTAL DEFORMITIES IN THE JAWS OF THE INSANE.

No.	Sex.	Normal.	Large jaw.	Protrusion lower jaw.	Protrusion upper jaw.	High Arch.	V-shaped Arch.	Partial V-shaped Arch.	Saddle-shaped Arch.	Small Teeth.
430	M.	394	10	4	2	18	12	29	3	5
270	F.	226	8	6	4	26	14	18	9	2
700	Total	620	18	10	6	44	26	47	12	7

Examinations of the mouths of 700 insane patients at the Cook County, Ill., Insane Asylum, and the Illinois State Insane Asylum, as shown in the table, revealed the fact that only about 12 per cent. were irregular, the irregularities consisting of protrusion of the upper and lower jaws, partial V, and very few saddle-shaped arches. The high arch was quite conspicuous among these people. Some of these irregularities were due to local causes. These irregularities were among cases of congenitally insane patients, or patients that had become insane early in life. These observations were not confined to the hereditary types.

With few exceptions insanity does not appear in the individual until the skeleton has attained its normal development. There were irregularities of the teeth produced by local causes. It is probable that a large percentage of constitutional

irregularities of the teeth could be found in the mouths of inmates of our private asylums, where there are more hereditary cases. It has been suggested by Dr. Coles that high vaults and cleft palates are associated. It is doubtful if this can be proven. Out of 1,977 idiots 318 had high vaults and but one case of cleft palate. Among 2,142 deaf, dumb, or blind persons, there were 255 high vaults, and only three cases of cleft palate. This small percentage would indicate that this lesion is not inherited nor developed with the osseous system, but is merely an accident, and local in its origin.

The high arch or vault, observed among idiots, and also observed, though perhaps not so frequently, among normal persons, cannot be considered a deformity or irregularity of the jaw, although where present it furthers the production of irregularities of the teeth. This peculiar formation of the roof of the mouth was seen closely allied with the V and saddle-shaped arches, and many that have given thought to this subject, especially Dr. Ballard, believed it a part of the deformity, and that it was produced by the pressure of the thumb or finger in the roof of the month. I have examined a number of children while sucking the thumb or finger, and have never found that they reached the roof of the mouth. If it were possible for the high arch in the anterior part of the mouth to be produced by pressure of the thumb or finger, how can we account for the high arch in the posterior part of the mouth when the position is such that the thumb or fore-finger cannot reach it without considerable exertion? Some of the arches are higher at the median line, others at either side of the median line, while still others are high, broad or flat, showing that they could not be produced by sucking a foreign substance.

I venture the opinion that the high arch is a natural development of contour in harmony with the other bones of the face. It is produced in connection with the eruption of the second teeth, and with the development of the facial bones, by the elevation of the vault on the one hand, and the elongation of the alveolar process on the other. This is seen generally in connection with long thin faces, and long thin jaws, necks and limbs. It is connected with the typical shape of the American face, and is not so often seen in foreigners.

Irregularities of the jaws and teeth, as the V- or saddle-shaped jaws, are not confined to the high vault; they are frequently seen in connection with the medium or low vault. The high vault, as has been mentioned, aids the production of irregularities. The alveolar processes are thin and long, affording feeble resistance to the pressure of the teeth, as they force their way into the arch. The thin alveolar process gives way and either the V- or saddle-shaped jaws are produced.

The percentage of small and large teeth is small. The teeth, unlike the other tissues of the body, develop from the periphery, their development beginning as early as the sixth week of intra-uterine life. Calcification sets in immediately, and the shape and size of the teeth are determined while the surrounding tissues are yet soft. The calcific material, which is first deposited on the outer surface, protects the inner part of the tooth-structnre, and unless some constitutional disturbance like eruptive fevers, or an inherited diathesis, impair nutrition, the teeth will develop normally. Generally speaking, the teeth are of the same size to-day that they have been for ages. When teeth are usually large or small they may be accounted for as an inheritance.

I have described the condition of the jaws and teeth that are not intimately connected with the three general pathological and physiological abnormalities of the jaws already mentioned, viz., excessive development, arrest of development and inharmonious development of the bone tissue. The feeble-minded patient affords ample opportunity for the study of these abnormal conditions and of bone tissue. The text books describe these conditions but meagerly, and the profession generally speak of all enlargement of tissue as hypertrophy, and of all tissue not strictly up to normal as atrophied. The different causes of these conditions are not sought after, nor are they well understood.

When excessive development of the jaws exists, the circle of the jaw is larger than the arch of the teeth. The teeth are seldom irregular nnder these conditions This inharmonious development prevents the proper articulation of jaws. Excessive and inharmonious development are seen less frequently than arrested development. This[4] is due to lesions of the nerve centres, and constitutional diseases such as syphilus, scrofula, rickets, race crossing, climate and soil, and early extraction of the teeth. The result of arrested development of the jaw is the arch of the jaw is smaller than the arch of the teeth, and consequently the teeth are irregular. The principal types being the V and saddle and kindred shaped arches. The above statistics indicate that irregularities of the teeth follow neurotic lesions, as a natural result.

Any disturbance of the function of nutrition naturally affects the osseous system. Kingsley and others, including myself, have seen that some of the lower grade of idiots, deaf dumb or blind, possess well developed jaws and teeth. It is a fact admitted by all pathologists that under certain environments the tissues of the body develop abnormally. This occurs in the osseous system. This being the case large jaws and regular teeth are sometimes seen.

[4] See Dental Cosmos, 1888 and 1889.

BATHING AND BOATING ACCIDENTS.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association June, 1889.

BY IRVING C. ROSSE, A.M., M.D.,
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I am not sure that I could have selected a more appropriate time and place to bring to the notice of the profession some of the accidents that occur in bathing and boating. Even here in lovely Newport, where I have spent many happy days, sad cases of drowning occur every season, and it is safe to say that most of them arise from inexperience in swimming and are consequently preventable. As a physician and practical athlete, I may show more than ordinary enthusiasm in making a plea for the educational, hygienic and curative advantages of an exercise that I have practiced at many different places over the world from the tropics to the Arctic Ocean, and in such places as mountain lakes, the mid-Atlantic, and even in a volcanic crater some 2,000 feet deep.

The frequent accounts of drowning that one reads constantly in the daily papers at this season, aside from those occurring in the late floods, instead of dampening rather rekindle an ardor to which is added a tinge of regret consequent upon the reflection that most of these accidents arise from inability to swim; for with only a moderate knowledge of this easily acquired art, many lives may be saved and much bereavement prevented. Philanthropic motives, if no other, would therefore prompt one to give the matter more than passing notice. In view of the surprising great number of deaths from drowning, it is lamentable in this practical age that the useful art of swimming takes such small part in the training of youth. Young minds are crammed with all sorts of useless information to the neglect of what is essential to the preservation of personal health and the saving of life. Legislators vote large sums of money for doubtful jobs, yet refuse to countenance the establishment of swimming baths in our cities. The police regulations of most of our large towns, conceived in the interests of extreme prudery, virtually tend to make swimming one of the lost arts. Those of the District of Columbia, for instance, were evidently framed in the same spirit of protest which caused a former Governor of Maryland to object to midshipmen swimming from a certain wharf in the Naval Academy because the ladies could see them with their opera glasses.

That people do not fully realize the importance of swimming is a trite observation, but a truth none the worse for frequent repetition, and allowing it to lie fallow will never bring about the desired reformation. Long personal experience with swimming so convinces me of its usefulness that, if it came to a choice between knowing the higher mathematics or how to swim, I should choose the latter every time. At many of the larger schools in England lads are obliged to pass in swimming before they are allowed to go out in boats. This rule, established at Eton in 1840, has been effectual there in the prevention of drowning, only one case having occurred since that time, although the swamping of boats has been frequent. A yearly average of 150 boys learn to swim and pass the test. It is, of course, possible to enforce such a rule in schools and among bodies of individuals where discipline obtains, yet this manly and invigorating accomplishment is neglected both in educational establishments and in the Army. Swimming is taught at our Naval Academy, but at West Point it is not, and most of the cadets are lamentably deficient in this respect. The statistical exhibits of our late war show the strongest reason why a soldier should know how to swim. The aggregation of killed in action is shown to be 67,058, while there were drowned 106 officers and 4,838 men. The small regular Army lost 5 officers and 89 men from this cause; the U. S. colored troops 6 officers and 289 men; and the volunteers furnished a large contingent, the State of Ohio alone having lost 14 officers and 770 men from drowning. Just think of a number amounting to five regiments perishing from an easily preventable cause—for the majority of these men were drowned in such circumstances as fording a stream, crossing narrow rivers, or by the upsetting of small boats when a few strokes would have sufficed to save life.

But the best swimmers are often drowned, say the cynical wiseacres. True, a good swimmer sometimes meets with that misfortune, but the occurrence is so rare that for that very reason a vivid effect is produced on the imagination and memory of unthinking persons who, accustomed to make *post hoc* conclusions, never for a moment consider the greater number who are saved by knowing how to swim.

Among other prevailing and groundless objections to swimming are the production of colds, the danger of heart failure and the risk of being bitten by sharks. As to colds and the effects of the cold immersion in the water, I should say that the danger therefrom is greatly exaggerated, if my own experience is any guide, for I have never had a cold from swimming in icy water, even under the Arctic Circle. On the contrary, one of the severest colds I ever had was contracted in Washington some years since with the thermometer high in the nineties, which necessitated a visit to the seashore, where after two swims the cold disappeared as if by magic.

There are, of course, many weak people whose chest organs are in such condition that they should not venture to swim; but I am convinced that the neglect to learn swimming in childhood and the absence of this eminently hygienic exercise are responsible for many flabby hearts, weak lungs and torpid minds.

In addition to being generally tonic and bracing, the effect of swimming considered in itself is to develop the muscular system and to exert a favorable influence on the great bodily functions, as the digestion, nutrition, respiration, circulation and innervation. No other exercise with which I am familiar gets the heart and lungs in better working order, and none is better for getting one in what sporting men call "condition." After two weeks' daily swim in salt water I have run a measured mile on a beach with very little more embarrassment to circulation and respiration than if I had walked the same distance.

Aside from the physical, another advantage of a high order accrues in the way of happy moral influence. Boxing, sword-play and several other manly pastimes will do much to develop courage, prudence and cleverness; but the cold-blooded quiet and presence of mind which aid us to avoid danger or to conquer it, or to lend ourselves to an act of devotion, are best cultivated by the exercise of swimming. What, for instance, is a more brilliant and commendable act of devotion than that of a dauntless swimmer who, regardless of self, plunges overboard at the risk of his own life to save a fellow-being from drowning?

As a curative means, swimming also comes in for praise. In this respect it is superior in many conditions to the so-called "tent cure," to massage, electricity, or drugs, and may be employed with benefit in scrofula, chlorosis, convalescence, insomnia and many other nervous diseases, as chorea and hysteria. The latter malady especially, I have known to be cured after a course in the swimming baths of Alameda, Cal.; and my experience as a neurologist leads me to recommend swimming as one of the best adjuvants in the treatment of nervous diseases.

The danger to be apprehended from sharks is more a figment of the mind than a reality. I have no personal knowledge of shark bites, although I have done much swimming in such infested places as the Gulf of Mexico, the harbor of Cadiz, the Azore Islands, Bermuda, Tybee, the mid-Atlantic and other places where these voracious animals are reputed to gobble up such small bait as a man at a single mouthful. For years I have made it a point to question sailors and fishermen in various parts of the world as to their actual and personal knowledge of shark bites, and though the inquiry has called forth some remarkable fish stories, I have met but two people with any personal knowledge of the matter. Admiral Porter tells me of an instance in which he saw a man attacked; the other person, a pilot at Bermuda, knew of a man that had his hand bitten by a shark just as he was pulling in a hooked fish from the water into his boat. Sharks often collect around the carcass of a whale while it is being "cut in," and men sometimes slip overboard among them, yet after a long residence in New Bedford and a somewhat extended experience with the Pacific Arctic whaling fleet, I have never met a whaleman who could tell me of a man that had been bitten. My friend, Mr. Truxton Beale, of Washington, a short time since, when a passenger on the Pacific Mail, showed his unbelief in shark stories by swimming across the shark infested harbor of Acapulco, although warned by the captain of the ship that he would be eaten up before he got a hundred yards away.

Traditional accounts of the rapacity of sharks are as extravagant as the records of some of the old writers who tell of dead sharks cast upon the shores of the Mediterranean of such size that men walked into the mouth and down the throat in order to inspect the stomach. Even Rondelet, in his History of Fishes, speaks of these animals as having swallowed men in entire suits of armor.

Documentary evidence as to shark bites is also very scanty. During the last fifty years, soldiers by the tens of thousands have swam at Fort Monroe, Va., yet there is no record of one having been bitten by a shark, nor have I been able to ascertain that any accident of the kind has occurred at Malta or Gibraltar. There does not appear to be a record of any one ever having been bitten by a shark off the British Isles. I have been unable to ascertain that a single bite of the kind is reported among the medical records of our War or Navy Departments or those of the Marine-Hospital. In a book about the West Indies, Mr. Charles Ives says it is singular that so few facts are reported which indicate the danger from Bahama sharks, and that the divers continue to be so numerous and bold. He has heard of but one instance in which a Nassau shark has dined upon a negro, and the report in that case is not well authenticated.

The *New York Herald*, a few years ago, gave an account of a boy who was bitten while swimming in East River, and afterwards died at Bellevue Hospital.

Medical literature has but few reports of shark bites. After ten years' diligent search I have found but seven references, the earliest in the *London Medical Gazette*, 1823, and the latest in the London *Lancet*, 1886. The bites occurred in Australia, South Africa and India. The Hooghley and Ganges Rivers are the worst places in the world for sharks and alligators. A particular kind of shark, the *Carcharras Gangeticus*, which is very fierce and bold, sometimes dashes among the crowds at the bathing ghats, and has been known to bite a boy in two feet of water. All persons bitten at these places generally die from the bite, for the reason that the shark, living on carrion portions of which stick between the teeth, carries infection to those whom it may afterwards bite. The former habit of throwing the dead in the river is supposed to account for the boldness of these particular sharks in attacking the human species.

Even admitting the occasional accident of shark bites, the danger therefrom is almost infinitesimal compared with railway travel or even accidents from horses; and neither this unimportant drawback, nor any other that I have mentioned, should have the least weight in preventing the cultivation and spread of an accomplishment that every one should countenance with a view, not to the renewal of the legendary exploits of Leander and Byron, but as a step in that branch of social evolution which better physical development and improved health tend to promote.

THE PHARMACOPŒIA OF 1890.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY D. W. PRENTISS, M.D.,
OF WASHINGTON, D. C.

The decennial convention for the revision of the U. S. Pharmacopœia meets in Washington, D. C., in May, 1890. This matter of a Pharmacopœia and its periodical revision is of greater importance to physicians than is generally supposed. The Pharmacopœia is the authoritative guide to the pharmacist for the selection of drugs and the making of preparations from drugs. It contains such as are considered by this convention of sufficient importance to justify official sanction, and each ten years those which have not stood the test of experience are dropped, and others that within that time have been discovered to be of decided value are added.

The idea prevails much too generally in the medical profession that the Pharmacopœia is a book that belongs to the pharmacists *per se*, and I fear a large number of physicians have rather a confused idea as to what this book is. Many, I know, have within a very short period confounded it with the dispensatories.

When the convention for the decennial revision met in Washington in 1880 it was my fortune to be on a committee to provide for the entertainment of the visiting members. In this capacity I had occasion to call upon the physicians of the city for contributions to that end, and was met in many instances by the inquiry, "What have we to do with entertaining this convention? This is an affair of the pharmacists." But so far from being an affair of the pharmacists', a glance at the personnel of the convention of 1880 shows that of the sixty-four delegates present twenty-two were pharmacists and forty-two were physicians—nearly twice as many, and justly so, for the interests of the physicians are paramount in that the Pharmacopœia is directly dependent on their needs of drugs and drug preparations in professional work.

The convention is, however, necessarily composed of representatives of both professions, because upon the pharmacists devolve the duty of determining the best processes of making the preparations, etc. In the work of revision the physicians are more particularly interested:

1. In deciding as to what drugs and preparations shall be added to or dropped from the last Pharmacopœia.

2. In indicating the forms in which they desire to have drugs prepared for convenient use.

3. In prescribing the strengths of various preparations, such as fluid extracts, tinctures, etc., to secure, as far as possible, uniformity.

On the other hand, the portions of the work that come especially within the province of the pharmacist are:

1. The selection and care of drugs, that they may be of good quality and of uniform strength, and be properly preserved.

2. The determining of the best processes of making preparations to secure the same end.

Both professions are interested equally in

1. Securing uniformity of weights and measures.

2. Encouraging the establishment of an international Pharmacopœia.

As also are both pharmacists and physicians interested in the various tables, "thermometric equivalents," "percentage and special gravity," "solubility," etc., which appear in the book of 1880; and though occupying a very modest position, they represent an immense amount of work.

The work of revision in 1880 was by the convention placed in the hands of a revision committee of twenty-five, of whom twelve were physicians and thirteen pharmacists. The labor of completing the work, however, was not so equally divided, an immensely larger share falling to the pharmacists, especially to the energetic chairman, Prof. Charles Rice, of Bellevue Hospital, New York, to whom too much credit cannot be given for his indefatigable industry. It was manifestly proper that the pharmacists should have the larger share of the work, for the bulk of the volume is devoted to the details of pharmaceutical processes. But there is much coming within the province of the physician that may very advantageously receive his attention, and it is hoped that physicians will give it more attention in 1890. Already the pharmacists are actively at work in the field. At the meeting of the American Pharmaceutical Association, now being held in San Francisco, no less than fifty-six distinct queries upon this subject will be reported on and discussed, mostly technical, but others of general interest, such as 41 and 42: 41. Cannot the nomenclature of the Pharmacopœia be improved? 42. What system of weights and measures should be adopted in the next revision of the Pharmacopœia? will be recognized as being of general

interest. I am not aware that any official action has been taken by this Association.

It is now too late to do more than appoint the three delegates to the convention, to which we are entitled, for the convention meets in May, 1890, before the usual time of meeting of this association, and there would be no opportunity for a committee to report. We can, however, appoint the delegates, and I have no doubt the Association will do this, and perhaps give them instructions expressing at least the value we place upon the periodical revision of our Pharmacopœia.

Among the most important measures to be decided upon will be:

1. In regard to the strengths of galenical preparations as to uniformity.

2. Uniform system of weights and measures.

First.—In regard to the uniformity of strengths of such preparations as tinctures, fluid extracts, solid extracts, wines, etc. Time does not allow a full discussion of this question, but I would like to say a few words to indicate the importance of uniformity in this direction. If we could make the liquid preparations of crude drugs of a definite percentage of strength, does it not at once appear that only the dose of the crude drug would have to be learned? For instance, fluid extracts are of 100 per cent. strength; their dose is the same as the drug from which they are made. Then make all officinal tinctures 10 per cent., and their doses will be one-tenth that of the drug from which they are made. Make solid extracts 500 per cent. strength, as is now the solid extract of ergot. What is more simple than the directions for making this extract: "Fluid extract ergot, 500 parts; evaporate to 100 parts." Then the dose of a solid extract would be five times that of the drug.

An attempt was made in this direction of uniformity in the last revision. Liquid preparations of opium were made 10 per cent., except paregoric. In other tinctures those approaching 10 or 20 or 5 per cent. were made of those strengths respectively, so that we have now

20 per cent	23	tinctures.
15 "	9	"
10 "	23	"
8 "	6	"
5 "	2	"
Irregular	12	"
Total	75	"

It is apparent from this list of seventy-five tinctures that this classification of strengths is of no assistance to the physician or medical student in remembering doses. Every teacher of materia medica will appreciate the importance of simplifying the labor of students in the line of dosage. These tinctures should all be of 10 per cent. strength. I have shown in another place that this is entirely feasible.

It has been said by high authority that our present Pharmacopœia is now the best in the world. If we still further perfect it, it will be taken as the guide in making the coming international Pharmacopœia, concerning which a congress meets in Paris on the 1st of August of this year.

Second.—A second important consideration is the question of uniform weights and measures. This will also be considered by the congress in Paris on August 1, and we need not doubt what system will be adopted. The metric system is already international in science, and is in use in all civilized nations except England and Russia. Where the metric weights and measures are used the proportion in every formula is expressed in the per cent. ratio. It is becoming more and more important every year for the educated physician and man of science to be familiar with metric terms.

A great proportion of medical literature comes to us from nations using metric terms, and it will be noticed that medical journals, in quoting from foreign publications, now usually give the metric terms without translating them into our own cumbersome weights and measures.

Third.—A third subject, the importance of which can hardly be estimated, is the necessity of devising some plan for securing uniformity in strength as represented by the active principle of many preparations, as tinctures and fluid extracts. For example, such crude drugs as aconite root, belladonna leaves and digitalis leaves vary greatly in their strength, even though the best care is exercised in their selection. By the present system of making preparations the latter necessarily must vary in like proportion, and this is undoubtedly the cause of many disappointments in therapeutic effects. With tincture of digitalis and tincture of cannabis indica it is necessary, in individual cases, to begin with a minimum dose and gradually increase the dose until the desired effect is obtained. The remedy for this condition of affairs is obvious. A standard strength of the active principles should be fixed upon, and the value in active principle be determined by assay. This, if honestly carried out, would be a great improvement upon the present system. It would entail more labor and greater care on the manufacturing pharmacists, but it would be to their interest to carry out faithfully such requirements, for physicians would not be slow to discover whose preparations were most reliable.

There are other matters in this connection that might perhaps be profitably discussed, but as the object of this paper is only to call the attention of my colleagues to the importance of the revision of the Pharmacopœia which will be made in 1890, I will no longer impose on your attention.

AN OPERATION FOR UTERINE FIBROID.

Read in the Section of Obstetrics and the Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. B. BOWEN, M.D.,
MAQUOKETA, IA.

Subperitoneal or extra-uterine fibroids are justly regarded, in the treatment, as one of the most difficult problems in surgery, hence this report.

Mrs. W., æt. 38, and mother of four children, detected a movable "lump" or tumor in the left iliac region some three years prior to the operation for its removal. She attributed its cause to over-exertion and fright, caused by a prairie fire that consumed her home. In a few months it had attained a size that inconvenienced her. She received little benefit from her local physicians, whom she consulted from time to time, there being little uniformity of opinion in diagnosis and treatment.

Menorrhagia and dysmenorrhœa were well marked characteristic symptoms, and of late a frequent recurrence of hæmorrhage has annoyed and weakened her. I first saw the case in April, 1883; found the patient confined to her bed by an enormous abdominal tumor, evidently fibroid; her flesh and strength were much exhausted, and she entertained little hope of her deplorable condition been benefitted by treatment.

I of course gave her little encouragement, but that little through surgical resources. The condition of the patient was so hopeless that it inspired desperate resources, and after calmly listening to the details of the operation, she resolutely determined to risk the chance, and even demanded the operation. Her financial condition was such as to deprive her of the skill of an expert, or specialist, and I was urged to this formidable operation and my first *laparotomy*. After what appeared to me to be proper preparations for so formidable an operation, and in spite of the meagre encouragement found in the literature of uterine fibroids, from Thomas, Emmett, Goodell, Schroeder and Gross, the time was fixed, the assistants selected, and the preliminaries arranged.

Friday, May 11, 1883, the operation was done. The usual incisions through the linea alba below the umbilicus, enabled me to explore the abdomen for adhesions, which were slight and easily separated between the tumor and the peritoneum, but the omentum had formed intimate and extensive union with the tumor; its large venous trunks entering and blending with the tumor. Several of these vessels were ligated and divided between the silk ligatures, and the omentum entirely detached. The abdominal incision was extended to the ensiform cartilage, which extensive incision barely offered room for the passage of the fibroid growth, some two feet in diameter.

The tumor was rolled out of the abdominal cavity, and its attachments sought for, which proved to be so firmly adhered to the floor of the pelvis, including the pelvic viscera, that I deemed its separation fatal to the patient, her condition being alarming in the extreme from shock. Hypodermics of brandy were given, and inhalations of nitrate of amyl, to arouse if possible her waning vitality. Meanwhile the toilet of the peritoneum was hastily and imperfectly arranged, the enormous fibroid mass was rolled back into the abdomen, and its walls with difficulty made to meet over and around it. Sutures, long adhesive strips, and a flannel bandage retained them in place, after iodoform and absorbent cotton had been applied to the wound.

The patient was sustained and reaction encouraged with artificial warmth, morphine and atropine hypodermically, and such other treatment as seemed proper. It was hardly expected, by myself or assistants, that reaction would take place, so profound was the shock. The patient's home being some five miles in the country, I did not see her till next morning, and then took my post-mortem case with me, as I confidently expected to use it. To my surprise reaction was complete, the mind clear, and there was entire freedom from fever and pain. The patient continued to do well; the wound healed principally by first intention, but slight fever attended the healing, and but very little peritoneal inflammation was encountered. After reaction neither pulse or temperature were above 100°. The patient regretted I did not complete the operation.

Over six months of languishing and suffering succeeded, but very little acute pain attended it. November 21 I made the autopsy and found a suppurating fibroid, removed thirty-two pints of pus. The tumor was firmly adherent to the abdominal walls. The solid portion weighed thirty pounds and had no pedicle. The opinion held at the autopsy was, that its removal would have been fatal, at the time of the operation.

ADDISON'S DISEASE, WITH A REPORT OF AN AUTOPSY.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. S. WATSON, M.D.,
OF MATTEAWAN, N. Y.

About all that seems to be known of this disease is that it is due to some lesion of the suprarenal capsule. We deem it almost needless to enter into any description of those glands, nor shall we attempt to add much or venture an opinion as to the part they subserve in the human economy.

The disease under consideration presents some well marked symptoms, differing in degree: but

rarely do we find all of the various symptoms combined. Generally one or more sets of well defined symptoms predominate, to the exclusion of others. In most instances that have come under our observation there was persistent nausea; later came vomiting, gradual asthenia, marked local bronzing, more or less rapid loss of flesh during the acute attacks of gastric disturbances, which occurred at intervals. The sufferers from this peculiar ailment are irritable, cross, given to periods of despondency. Failure of strength is one of the earliest symptoms, though this condition may come on slowly or rapidly. When quiet, the patient feels strong and fairly well, but a little exertion causes him to feel faint and weak. There is a lack of energy, and oftentimes there is a willingness to lie in bed day after day. There is also muscular debility, which is irregular, the patient being better one day and worse the next.

The progressive discoloration of the skin is not, we think, that of a bronzing, as has generally been stated, unless the sufferer possesses a naturally dark skin. In the blonde, or light-complexioned individual, we have marked changes of the skin—that of a bleached or bloodless appearance, assuming at the near approach of death a jaundiced hue, without the heavy, dark, pigmentary deposits about which so much has been said.

If we accept Professors Kölliker and Bergamon's microscopical anatomy of these ductless glands, and which our own observation corroborates, they are in structure small, somewhat flattened glandular formations situated behind the peritoneum and in front of the upper end of each kidney, having an external, cortical and internal medullary substance.

Microscopical anatomists differ in their views respecting these minute columnar masses. The medullary portion is composed of nuclei and granules having numerous small veins. The nerves are also numerous, and belong to the ganglionic, or sympathetic, and the pneumogastric. The blood-vessels and nerves lie in the stroma of the connective tissues, forming two kinds of capillary plexuses, one being in the cortex, having elongated meshes, the other in the medullary substance. The arteries, some twenty or more, arise as numerous small vessels from neighboring larger trunks, as the phrenic, aortic and renal, and thence penetrate directly into the medullary substance, or ramify into the cortical. Kölliker says these vessels empty on the right side into the vena cava; on the left, into the renal vein. Reasoning from the standpoint of these glands, they being so abundantly supplied with blood-vessels and nerves, and considering their origin and insertion, there remains but little ground for doubt as to their importance. Although we remain in darkness as to their exact function, yet we feel sure that the grave symptoms attending diseased conditions of the supra-renal glands are explainable when we consider the nervous connection, the venous and the arterial supply to these glands. The asthenia attendant may reasonably be attributed to the prolonged reflex irritation of the nerve centres. Heart disturbances, weak pulse, shortness of breath upon slight exertion, due to reflex implication through the pneumogastric and the phrenic nerves, the extreme nausea and vomiting during the last stages of this peculiar ailment, point to the solar-plexus and ganglia.

Brown-Séquard found that ablation of the supra-renal glands or capsules was uniformly fatal, and he believed death to be due to the retention of some poisonous substance in the circulation which it is the office of these glands to remove. Other men, equally eminent, claim that death following the removal of the supra-renal capsules is certainly attributable to hæmorrhage or injury to the nerves. We are inclined to the belief of Brown-Séquard, since it is true that inflammation of these ductless glands do bring about marked pathological changes or functional derangements. The conclusions at which we have arrived are based upon autopsies made by us, together with information gleaned from such authorities as Köllicker, Brown-Séquard, Carpenter, Addison, and others. We should look upon the glands under consideration as important, and regard them as possible eliminators, even though possessing no distinct efferent ducts. It is conceded by physiologists and microscopists that these glands are more abundantly supplied with blood-vessels than any other glandular body of similar proportions, and also with a larger number of nerves.

We shall describe a case of "Addison's disease" which was followed by an autopsy upon the patient, Mr. W. H. Cook, aged 40 years, who presented a pronounced bronzed appearance for about four years previous to his death. He was of a dark, bilious complexion naturally, possessing a delicate constitution, and a hatter by trade. During the last two years of his life he complained of what he thought were bilious attacks, which caused pain in his kidneys. His family history gives no evidence of phthisis; it is believed that one sister died of cancer of the womb. Mr. C. had been treated by several physicians before going to Roosevelt's Hospital, New York City, in which institution he remained for some weeks, receiving no benefit. He returned to his home, where we were called to see him on November 22, 1888. We found him suffering from the effects of a decided chill, which was due to exposure in a rainstorm while attending the funeral of his wife. The surface of his entire person was cold, his pulse slow and weak, constant nausea and vomiting, complete loss of appetite, skin much bronzed—in fact he presented a decided

mulatto appearance. He was very much emaciated, nervous and restless. His nervous system had just received a severe shock by the loss of his wife, who died two days previously. He complained of some pain in the stomach and in the region of the kidneys. He was inclined to lie in a semi-comatose condition a part of the time; at times his mind was clear, and he could converse intelligently.

Nearly all the medicine given to him was rejected, though some stimulants were retained, and external warmth was applied, which had the effect of restoring the circulation sufficiently to get him warm. We visited him daily until December 1, when he died. On December 2 we made an autopsy. The heart was first examined and presented nothing abnormal. The stomach was almost normal in appearance, showing possibly a slight evidence of recent congestion; the liver and kidneys were normal in appearance; the supra-renal capsules on the exterior were normal, with the exception that both were considerably enlarged, the left one being about one-fourth the larger. On examination of their interiors there were found evidences of chronic inflammation which had passed successively through the stages of fatty and cheesy degeneration. Some portions of each pelvis were mere fibrous sacs containing a puriform liquid and some gritty particles, the calcareous results of cheesy degeneration. The internal cell masses of a large portion were almost obliterated and the medullary substance considerably broken down, apparently from the results of inflammation.

Question.—What is the cause of the inflammation of these ductless glands, and how do they bring about such grave symptoms when diseased?

MENTAL WEAKNESS RESULTING FROM THE PRESENCE OF AN ENCHONDROMA OF THE SEPTUM NASI.

Read by title before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. PEYRE PORCHER, M.D.,
OF CHARLESTON, S. C.

The following case exhibits a remarkable sequence of cause and effect, even to a condition bordering on mental abberation, from the presence of a cartilaginous spur projecting from the septum nasi, and pressing against the contiguous turbinate. That the recovery was a direct result of the treatment instituted, is beyond a doubt for the following reasons:

1. The patient's illness had existed for over a year, and was at the time of his first visit to me distinctly worse than at any previous time.

2. He had just returned from a large watering-place, where he had been for six weeks, and during that time he had not only received no benefit, but his symptoms had increased to such an extent that his return home became imperative.

3. His improvement after the removal of the growth was immediate and permanent, and he is at present enjoying robust health.

H. F. P. White, aged about 32, avocation planter. His history was, that for two years previous he had been subject to *frequent attacks of coryza*, accompanied with vertigo, headache, great torpidity of bowels, and general malaise. During this period he had two attacks of pleurisy, and as a result of it his nervous symptoms became especially prominent. He had constant and prolonged insomnia, hysterical pains, noises and jumping movements in his left side. The latter annoyed him to such an extent that he tore open his under clothes over that region in the effort to get at or remove the cause of the unpleasant sensations.

His attendants thought he was suffering from melancholia, and he was advised to visit one of the springs, in hopes that he might derive benefit from the change; and he therefore spent six weeks at a large watering place, as above stated, but returned home extremely nervous, and without having received the slightest benefit. He was able to sleep but very little at night, continually brooded over his condition,—thinking that he was doomed to consumption on the one hand, or to insanity on the other; both being hereditary taints in his family; and on this latter account some of his near relatives thought he had softening of the brain.

It was in this condition that I first saw him, scarcely able to control his nervousness, and with but little hope of ever regaining his former mental or physical condition, as he had been unable to attend to his business for over a year.

It was at once apparent that his mind must be set at rest, and this I did by assuring him that his nervous symptoms could be controlled, and ordered him a hepatic stimulant and laxative, as follows: ℞. Pil. hydrarg., grs. v; podophillin. gr. ¼. M. S. at once. Also, ℞. Fl. ext. stillingi sil., ʒ v; tr. nucis vom., tr. belladonna, tr. physostigmatis, āā ʒj. M. S. in water before meals.

While making this general examination, I noticed that he had a frequent tendency to "sniffling," and this led me to make a rhinoscopic examination. A cartilaginous projection was discovered jutting off from the septum and in contact with the left inferior turbinated bone. It was papillomatous in character, and very indurated. It caused him to bend his nostrils forcibly over to that side to get breath, and to clear them of accumulated secretion. He was entirely unaware of the presence of this growth. A small portion of the apex was cut away, sufficient not only to relieve the pressure but to leave a vacant space between it and the turbinate.

He received no additional treatment, except general advice as to hygiene, etc. His subsequent history was, that his insomnia and general depression rapidly disappeared.

A relative occupying an adjoining room informed me that she first became aware of his improvement by an absence of the frequent sneezing and clearing of his throat on first awakening in the morning, to which he was addicted; and he has since informed me that he has never been so free from coryza as he has been since the removal of the growth, not having had one attack in twenty months.

Nor has there been any recurrence of the pleurisy. His health is now completely restored and he no longer fears consumption or insanity. Here we have a distinct sequence of cause and effect: recovery following the removal of the exciting cause.

THE SURGERY OF THE SPINE.

Read in the Section of Surgery and Anotomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. WILLIAM WHITE, M.D.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY, PHILADELPHIA AND GERMAN HOSPITALS.

Dr. White divides the spinal troubles which may necessitate surgical interference into three classes: traumatisms, caries, and neoplasms. He reviews the history of the surgery of these conditions, gives the details of two cases in which he performed resection of the spine, and reaches the following conclusions:

1. The objections urged against operative interference in spinal traumatisms were partly theoretical (hæmorrhage, frequency of absolute destruction of the cord, pressure from inaccessible fragments of bone, etc.,) and have been shown to be unsupported by clinical facts. They were largely due to a well-founded dread of *a*, the shock, in the cases operated on in preanæsthetic times, and *b*, consecutive inflammation, suppuration and pyemia in pre-antiseptic periods. The later results, which now constitute our only safe basis for generalization, are distinctly encouraging, and resection of portions of the vertebræ in fractures, possibly even in dislocations, should be recognized as an eminently proper operation and in suitable cases altogether warranted by the facts in our possession; and further, such cases are by no means rare or exceptional.

2. There can be still less doubt that the testimony of pathologists and practical surgeons indicates that the cause of the paralysis of Pott's disease is in many instances an extra medullary proliferation of connective tissue, assuming the density and proportions of a neoplasm, occupying the space between the dura and the interior surface of the laminæ, not apt to be associated with intramedullary changes or with destructive degeneration of the cord, and very frequently removable by operation.

3. Every case of focal spinal lesion, thought to depend on a tumor and not distinctly a malignant or generalized disease, should be regarded as amenable to operative interference, no matter how marked the symptoms of pressure may be or how long continued.

4. The method of extension, as recently revived, is well worthy of preliminary trial in the first two classes and in obscure cases thought to belong to the third class. It has not yet been tried in a sufficiently large number of cases to establish its exact limitation, but it is unquestionably a therapeutic measure of vast importance in spinal injury and disease.

It is customary and proper in deciding upon any serious surgical procedure involving risk to life, to consider well the prospects of the patient in the event of non-interference and to be largely influenced by them. Looked at in this light the operative surgery of the spine as regards traumatisms, caries and neoplasms may fairly be said to have a rapidly widening field and to deserve more serious and careful consideration by practical surgeons than it has received for many years.

THE HISTORY AND EXHIBITION OF A DOUBLE-HEADED MONSTER.

Read in the Section of Obstetrics and the Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY E. F. WALKER, M.D.,

PROVIDENCE, R. I.

This specimen which I have the pleasure to show you, is a monster of the type known as Ischiopagus. Unfortunately the history of the labor is very meagre and incomplete, as the woman, who gave birth to it, was attended by a midwife, of not a very intelligent class and the details of the process are usatisfactory. I have tried to see the patient herself, but have not been able to accomplish my desire. However, such details as were obtainable I submit, asking your indulgence for their incompleteness.

Mrs. C., 30 years of age, born in Ireland, married, and a primipara. Early in the afternoon of July 15, 1888, labor pains first began and at 7 P. M. the midwife arrived and took charge of the case. The pains at that time were strong, and an early completion of the labor was anticipated. She continued to have very great pain until one o'clock in the morning, when the midwife "broke the waters to hurry her up," and states that from this time until the end, her pains were the most severe she ever saw, in fact she says they came so close together that the woman had no rest; finally at five o'clock, or four hours after the discharge of the amniotic fluid, with one long and severe pain, the mass was born, being

followed in about five minutes, by the spontaneous expulsion of the placenta. There was no very great hæmorrhage; in fact she states the woman did not flow as much as most women do. I enquired as to the condition of the perineum, but could not get any satisfactory information, but judge that it could not have been seriously injured as the patient made a rapid recovery, and at the end of a week was doing her own housework. Since then she has enjoyed her usual health and is now pregnant again.

The monster lived until about seven o'clock the next day, or twenty-six hours in all. When born it cried, and in the words of the midwife, "both ends took milk from a spoon and swallowed quite greedily." Its weight at birth was between fifteen and sixteen pounds. There was but one placenta and one cord; there was no history of fright or injury and the woman had not experienced any unusual symptoms during her pregnancy, and had no reason to assign for any such unusual condition.

The mass is of crescentic shape—its longest surface following the line of the abdomen, which from vertex to vertex measures twenty-one inches. It consists of two bodies joined together at the buttocks, with a head at each end. The larger one has a trunk, two arms and two legs well developed; the other or smaller one has the right arm and right leg well developed, but a deformed left forearm and hand, and a deformed left foot and leg (the hand shows but three fingers, of unequal length). The left foot has a shortened little toe, due probably to the absence of its metatarsal bone, and the third and fourth toes are webbed. At the site of the umbilicus of the larger child there is a placental shaped mass, measuring 4½ inches by 3½ inches, with its convexity outwards and the cord, which went to a normal placenta emerging from the left side. This mass is firm in consistency, and lobulated. The smaller of the two twins has a protuberance springing from the cervical region and suggestive of spina bifida, is soft and apparently contained fluid in its recent condition. This mass measures in its longest diameter four inches and in its shortest three inches. At the site of the anus in the larger twin, there exists a suggestion of an imperforate one.

Lying between the left thigh of the larger and the right thigh of the smaller twin, *laterally*, is the vulva, the thigh of the left closing the vagina on that side, and on the right there is an undeveloped labium externum.

MEDICAL PROGRESS.

Treatment of Infantile Eczema.—1. Eczema intertrigo: Seek to combat the cause (generally acid diarrhœa) then apply cold compresses (solution of boric acid, 5 per cent., and water in equal parts), or if the surface oozes considerably dust it over with talc or oxide of zinc. Insist on great cleanliness.

2. Eczema of the head: If the child is fat modify its diet; if scrofulous give cod liver oil with phosphorous or an arsenical preparation (ocidum arsen. 0.005. grm. Boil with distilled water 40.0 grm. Dose one coffeespoonful). Suppress any occasional external cause, such as pediculosis (sublimate 1-1000) then soften the crusts with oily inunctions and apply a boric acid pomade:

R.	Acid. boric.	1.5 grm.
	Zinci oxidi	5.0 "
	Vaseline flav. ad	.30.0 "

Or use Wilson's pomade:

R.	Benzoës pulv.	1.0 grm.
	Axung. porc..	32.0 "
	Cola, adde zinc. oxyd	5.0 "

In the squamous forms:

R	Hydrarg precip. alb.	1.0 grm.
	Bals. Peruv.	5.0 "
	Ung. Wilson ad	30.0 "

3. Eczema of the trunk or limbs: Anti-scabetic treatment is necessary (bals. Peruv. or styrax and olive oil in equal parts).

It suffices generally to apply powdered medicaments upon the diseased surface after using vaseline.

In squamous eczema with infiltration of the skin rub twice a day with a few drops of oil of cade, then dust with starch or apply vaseline. At the end of two to four days bathe the diseased part with tepid soap suds and after twenty-four hours recommence treatment with oil of cade.

Tar is not to be used in the eczema of children. —*Archiv. für Kinderheilkunde.*

Sambucus Nigra as a Diuretic.—M. G. Lemoine, of Lille (*L'Union Médicale*), has made a study of Sambucus nigra (elder) the properties of which were discovered by the Ancients. The soft white bark next to the wood is the part possessing diuretic properties, but it is absolutely necessary that it be fresh. The author employed it in a decoction made by boiling a handful of the bark in a litre of water, the dose being from a litre to a litre and a half *per diem*.

Sambucus thus used is a diuretic of the first order rendering great service in the treatment of ascites and anasarca dependent upon kidney and heart lesions. With the administration of Sambucus it is often possible to increase the daily secretions of urine in a short time from 400 grams to 2,000 grams, or even more. The best effects are obtained in the albuminuria of nephritis and in the ascites which accompanies tubercular peritonitis in children, but its influence upon the ascites of hepatic cirrhosis is feeble. It

also acts upon the intestines, producing from four to six liquid stools *per diem*.

Lemoine believes that Sambucus produces its diuretic effect by a direct action upon the kidneys; it does not influence the heart or the circulation except through its diuretic action. It is a diuretic which owes its properties to an action upon the renal epithelium.

Combemale and Dubiquet have completed the researches of Lemoine obtaining the following results:

1. To produce polyuria with the entire bark requires a dose of from nine to ten grams per kilogram of the bodily weight.

2. To produce the same effect with the outer bark requires still larger quantities.

3. A much more intense effect is produced with the inner bark when given to animals in the proportion of four grms. per kilogrm. of the animal's weight.

4. After macerating the inner bark, three grm. *per kilogrm.* of the bodily weight is sufficient to produce polyuria which is accompanied by nausea, vomiting and diarrhœa. This is accompanied by lowering of the temperature and retardation of the pulse and respiration.

Foreign Bodies in the Bronchi.—Kobler reports two cases from Schrötter's Clinic of foreign bodies lodged in the bronchial tubes and gives a short sketch of the symptomatology of such cases.

There are three principal diagnostic features of the presence of a foreign body in the bronchus: the history, the absence of the foreign body from the upper air passages and a series of symptoms which result from the obstruction present in the bronchus, namely, variations in the character of the percussion and auscultatory sound as compared with those of the healthy side. The condition which presents itself to the examiner is that of a bronchial stenosis of sudden formation.

If the foreign body is not removed, then after the subsidence of the first sudden paroxysms a period of well being may ensue until the attention is again directed to the foreign body by certain sequelæ which always attend these cases. The sequelæ consist mainly in inflammatory processess set up around the foreign bodies, which usually lead to necrosis or pus formation. A rare sequela is bronchiectasis in the affected part. The reporter describes two such cases. In both of these the patients had no knowledge of the entrance into the air passages of a foreign body. The symptoms of bronchiectasis gradually appeared and death finally ensued. The autopsies revealed in one case the presence of a piece of bone and in the other a shirt button as the cause of the closure of the bronchus and the resultant sequelæ. The reporter explains the remarkable but often observed fact of the penetration of rather large foreign bodies into the air passages without the knowledge of the patient by the diminished reflex excitability of the respiratory mucous membrane in these individuals. While as a rule the presence of a foreign body gives rise to a more or less violent inflammation of the lung tissue in the cases reported there was at first only a bronchitis and then, as a result of this, chronic inflammatory changes of the pulmonary parenchyma. The principal factors then in the development of bronchiectasis were: moderate powers of resistance on the part of the inflamed bronchial walls, interstitial proliferation of the connective tissue and contraction of the lung tissue, and the abnormal increase of air pressure produced in that portion of the bronchial tree behind the obstruction. It is worthy of remark that in the first case there were no symptoms of bronchostenosis.—*Cent. für. Klin. Med.*

Pneumonia and La Grippe.—Messrs. Sée and Bordas have reported to the French Institute of Medicine some observations regarding the pneumonia of la grippe. These are their conclusions:

1. The lanceolated diplococcus of Pasteur and Talamon are always found in the lungs of individuals who have succumbed to fibrinous or lobular pneumonia. In this case cultures made with the fibrinous exudate do not give pure cultures of pneumococci. A certain number of microorganisms, such as the streptococcus pyogenes, staphylococcus areus, etc., are found.

2. By puncturing the spleen we have obtained pure cultures of the lanceolated diplococci in great abundance.

3. Rabbits inoculated with cultures from the blood of the spleen quickly succumb with all the signs of fibrinous pneumonia.

4. We have not employed the lanceolated diplococcus, found in the blood of pneumonia patients either before or immediately after death, except in the case of a patient who died from a general infection with meningeal complications.

5. We consider pneumonia not merely as a local disease of infectious origin, but also as a disease which may become infectious in the sense that it may invade other organs.—*La Prov. Méd.*

Mercurial Injections in Syphilis.—From a study of numerous cases in which mercurial injections have been given Dr. Hartman concludes that the hydrargyrum oxydulatum nigrum purum suspended in pure olive oil and administered by intra-muscular injection is a good antisyphilitic, and possesses a special advantage over calomel in that it excites less local reaction and produces less pain than the latter.—*St. Petersburger Med. Woch.*

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SATURDAY, APRIL 19, 1890.

SYRINGOMYELIA.

It is but a few years since syringomyelia was looked upon as merely a curiosity of morbid anatomy, but recent investigation has lifted from it the veil of obscurity, and it may now be regarded as a disease having a definite pathology and a sufficiently positive symptomatology to render its diagnosis comparatively certain in most cases.

Our knowledge of it comes chiefly from France and Germany. It was not, indeed, until two years ago, that the first complete study of the subject and review of its literature appeared in this country, in connection with a report of several cases, contributed by M. ALLEN STARR to the *American Journal of the Medical Sciences*. More recent contributions are those of CHARCOT, in the *Bulletin Médical*, BRUHL, in the *Archives de medicine*, and IRA VAN GIESON, in his Cartwright prize essay for 1889. Several other articles have also appeared.

The essential feature in the pathology of syringomyelia is not simply the existence of an abnormal cavity in the spinal marrow, as the name implies, but the presence of a gliomatous growth (glio-sarcoma), through the disintegrating action of which a cavity is formed. An abnormally large central canal (hydromyelia) is not infrequently met with as a result, either of original defect or of subsequent dilatation. It is highly probable that some of the cases of syringomyelia that have been reported were of this character, especially those cases in which no symptoms of spinal disease were observed, the disease being discovered post-mortem. Van Gieson adheres to the view that at least "some cases of syringomyelia are cases of congenital tubular defects in the cord, producing no symptoms until a gliomatous hyperplasia of their walls, or a tumor arising in the wall becomes large enough to injure the cord."

The symptoms of syringomyelia are produced for the most part by the direct extension of the new growth into the spinal marrow, particularly into the gray matter, but may arise in part also from œdema of surrounding parts, or from pressure upon them. There is usually complete destruction of the gray commissure, along with a greater or less portion of the posterior horns; and the neoplastic tissue frequently extends through the lateral columns to the anterior horns. The most frequent seat of the glioma is the cervico-brachial enlargement of the cord; it may reach up to the bulbar origin of the fifth pair of nerves, or it may be situated much lower. Sometimes the entire length of the cord is invaded, sometimes only a comparatively small segment of it is involved. The central canal is, however, usually dilated throughout the greater part of the cord. The symptoms vary greatly in different cases, but correspond in their location to the parts whose spinal nerve centres lie in the part of the cord that is the seat of disease.

In character, the symptoms are sensory, motor, vaso-motor and trophic. The distinguishing feature of the sensory disturbances is the fact, that sensation is not affected in all of its departments, but there is what may be called a dissociation of sensation. A diminution of the sensibility to temperature, or an entire absence of it, appears, as a rule, to be the first manifestation of the disease. The thermo-anæsthesia is distributed to zones corresponding in location to the region of the cord in which the posterior gray matter is affected. It is, however, seldom recognized until sought for; or is discovered accidentally upon the receipt of a severe burn without pain. Analgesia is usually present in these zones, but hyperæsthesia has been observed. The special senses remain intact. The muscular sense and tactile sense generally remain normal, but may be to a variable degree obtunded. Charcot has observed but one instance in which this peculiar dissociation of sensation was ex-

hibited, anomalous case of hysteria in the male. The muscular and tactile sense are affected only when, as a result of the direct action of the glioma, or œdema, or pressure, the integrity of the posterior white columns is disturbed.

Motor disturbances are frequent, not constant; they are various, and not characteristic. That most commonly observed is a paresis of one or both of the lower extremities, or of only certain muscles. At first unilateral, it generally becomes bilateral and commonly extends to the trunk. It is sometimes attended by a reaction of degeneration in the paretic muscles (Starr).

Muscular atrophy is one of the most constant and characteristic symptoms of the disease, next to the sensory disturbances already referred to, and is regarded by Charcot a trophic disturbance. The atrophy commonly begins in the upper extremities, but shows a tendency to become generalized. It produces a clawing of the hand (*main en griffe*), closely resembling that of progressive muscular atrophy. It is highly probable, indeed, that many cases of syringomyelia have been mistaken for this disease. Trophic and vaso-motor disturbances are also seen in the skin, in the subcutaneous cellular tissue, and in the osseous system. The skin is the seat of herpetic eruptions, eczemas, urticaria, bullous or phlyctenular eruptions, and there is sometimes a decided thickening of the epidermis of the extremities; the nails may also be affected in a manner resembling a painless whitlow. In the osseous system we meet with frequent arthritis, hyperostosis and fragility of the bones.

More remote accessory symptoms, depending upon the outward extension of the disease or pressure, are ataxic manifestations, spasms, contractures, or bulbar disorders.

The exact course of the disease cannot yet be mapped out, owing to the fact that thorough and accurate observations of cases have been so few. Its duration is variable; it is usually prolonged; at times its progress is very slow; it may even remain for years stationary; but as a rule, at no very remote time from its inception, the patient becomes bed-ridden and helpless, bed-sores develop, and finally death ensues from asthenia. Occasionally the death is sudden.

Bearing in mind these data, the diagnosis should not be a very great difficulty. The disease is confounded for the most part with progressive muscular atrophy, amyotrophic lateral sclerosis, multiple sclerosis, tabes, hypertrophic pachymeningitis, multiple neuritis and tumors situated outside the membranes. All these affections have certain features common to it, but as is emphasized by Charcot, none of them possess to any marked degree the dissociation of sensation which is so pronounced in syringomyelia.

THE ATTEMPTED RETROGRADE MOVEMENT IN MEDICAL EDUCATION IN THE STATE OF NEW YORK.

It ought to be very gratifying to the members of the medical profession, who are earnestly interested in protecting it from further accessions of ignorant and illiterate persons, that the leading journals of the State of New York, without regard to political affiliations, are making such vigorous protest against the repeal of the Act of 1889 of the Legislature of that State, providing for the preliminary examination of all intending medical students. The standard of literary acquirements established by the Act is low enough, contemplating hardly more than an ordinary grammar school acquaintance with *arithmetic*, *grammar*, *geography*, *orthography*, *American history*, *English composition*, and the *elements* of *natural philosophy;* but low as it is, parties interested in securing fees from young men and, for that matter, from old men as well, who, in this country which prides itself on its public school system, fall short of it, are actively at work to effect its repeal before it has been a year in operation and an opportunity offered for its practical test, and they have actually succeeded in carrying a vote for its repeal through the Senate. The plausible pretext for attack is the requirement of examination by State Regents, but it is evident that the faculties of medical schools, which make this pretense, can not very well be trusted with the work of examining proposed matriculants.

The following editorial on this matter by the New York *Sun* ought to receive the hearty approval of every reputable physician in the country:

SHOULD PHYSICIANS BE ILLITERATE?

An Act was passed by the Legislature in the session of 1889, providing that all persons intending to pursue the study of medicine must pass a preliminary examination in arithmetic, grammar, geography, orthography, American history, English composition, and the elements of natural philosophy. The Act further provided that this examination should be conducted under the authority of

the Regents of the University and in accordance with their rules, and that only those persons who have received a baccalaureate degree in course from a college or university duly authorized to confer the same shall be exempted from this preliminary examination.

This statute had its origin in the widespread conviction that something must be done to improve the quality of the medical student as the first step toward checking the entrance into the profession of illiterate practitioners who swell the ranks of charlatanry and degrade the title of Doctor. We must not only narrow the exit from our medical schools by rigid examinations, but we must guard the entrance to them as well. Such was the object of this legislation, and it is creditable to some of our medical colleges, all of which are mainly private enterprises, that they received the new regulation with approval.

Signs of opposition, however, *on the part of some of the schools* have already appeared, and with the opening of the present Legislature a bill was introduced to repeal the statute, which only went into effect in October last. This bill is known as the Brown bill; it has already passed the Senate and has been sent to the House, where we hope it will be defeated. The preliminary examination calls for very moderate educational requirements, but it is sufficient to deter very ignorant persons from attempting to study medicine. *It may bring about a considerable reduction in the income of the schools*, but it will be a great gain to the public if the number of physicians is diminished and the quality improved.

EDITORIAL NOTES.

HOME.

A Word of Caution to Advertisers.—We wish to state distinctly that no person is authorized to obtain advertisements for The Journal without the written authority of our business manager, Mr. J. Harrison White. The official programme of our annual meeting will contain no advertisements, and representations by outside parties that they have authority to obtain advertisements in the name of the American Medical Association, or in connection with the publication of its programme of proceedings, are in every instance fraudulent.

The Tenth International Medical Congress.—We published last week, as requested, a circular issued by a committee of American physicians, earnestly inviting the medical men of this country to attend the meeting of the International Congress, which will convene at Berlin, August 4–9, 1890. We recognize the eminent ability of the gentlemen who compose this American committee of invitation, and will even concede that better men could not be chosen; but in the recommendation of names to constitute that committee we are at a loss to know why the Alleghenies should form a dividing line, and that such cities as Buffalo, Detroit, Cleveland, Pittsburg, Cincinnati, New Orleans, St. Louis, Chicago, Milwaukee, St. Paul and San Francisco—indeed, the entire valley of the Mississippi and the Pacific coast, should not be permitted a single representative. The omission may have been entirely accidental, and yet it is none the less noticeable.

Medical Association of the District of Columbia.—At the annual meeting held April 1, 1890, the following officers were elected for the ensuing year, viz: Dr. J. O. Stanton, President; Dr. H. C. Yarrow and Dr. J. H. Mundell, Vice-Presidents; Dr. George C. Ober, Secretary; Dr. S. S. Adams, Treasurer.

Dr. Seaver, college physician at the Yale University, has a plan for providing a small private hospitals for sick students, who cannot be properly cared for in their own quarters. He wishes to secure a fund, yielding $700 annual income, which with the moderate fees paid by the patients, will meet the necessary expenses for this undertaking.

An Epidemic of Jaundice.—The *Maritime Medical News* states that Queens County and Charlottetown, P. E. I., have been visited by an epidemic of jaundice. Children were largely affected, although no condition of age, sex or position was discoverable as conferring immunity against it. In adults the complaint was at times limited to the reported feeling of "biliousness," while two, three or four of the children of the family would be distinctly marked with jaundice. In this and other peculiarities, the disease strongly suggests that a bacterial causation underlies the epidemic prevalence of jaundice.

The Medical Intermediary at Hot Springs.—The Common Council of Hot Springs, Ark., has voted to notify incoming visitors to that place to beware of the extortionate "drummers" of a certain class of medical practitioners who infest that resort. This notification was ordered to be done by means of a circular distributed on the railroad trains. If the newspaper correspondents are correct, at least one-half of

the fifty physicians living there have employed train-drummers to bring them patients and these people have exacted half of the regular monthly fee of twenty-five dollars, ordinarily collected from the victim in advance. Municipal ordinances have been passed to check this pernicious system, but they failed of their object until some one suggested that a printed circular be distributed among the visitors, while they were yet at a distance on the train. Before this was done the drummer laughed at the efforts of the lawgivers, but now he is greatly excited, and is engineering to have the circulars withdrawn.

A Thought from Dr. O. W. Holmes.—"When the hospitals are invaded by the novelist, he should learn something from the physician as well as the patients." This is the appropriately genial and wholesome sentiment offered by Dr. Holmes in the April number of the *Atlantic Monthly*. It will fit into many another situation in life in addition to that for which it is immediately designed. It might be concentrated so as to read: "Don't be too morbid."

FOREIGN.

Fever in Siberian Prisons.—At one of the prominent political prisons in Siberia there were in a single month, 275 cases of sickness by fever of some sort, but termed "typhoid fever." There were about five hundred prisoners at that place. The hospital accommodations were taxed far beyond their capacity and it became necessary to let some of the fever cases remain in their cells, some of which were at the same time occupied by those who had not had the fever and had not before that been brought into infective relations with the fever.

Actinomycosis in Austria.—Dr. Albert, of Vienna, addressed the last meeting of the Imperial Society of Physicians of that city describing two cases of actinomycosis recently seen by him, one being a primary infection of the skin and another an abscess of the neck. The latter was operated upon by incision and a thorough scraping out of the mycotic contents. This was followed by recovery. Dr. Albert states that actinomycosis can no longer be regarded as a rare disease. He has seen not less than thirty-eight cases of the trouble within the past few years; of these eight have come under his observation during the present scholastic year. These cases have come to him chiefly from Vienna or its environs. The tracing back of the disease to its cause or to the time at which the mycotic contagium was experienced is commonly attended with difficulty and an uncertainty. This must probably continue to be the case until the laity have come to know that it is a ray-fungus disease and are on the alert to recognize its beginnings. In regard to the question of the increasing frequency of the disease, there appears to be no good reason to accept that position, in view of the fact that it is easy to confuse this with other affections, more particularly with phthisis, in cases where the fungus takes root and grows within the respiratory tract.

Epidemic of Supposed Chancroidal Vaccinations.—The French correspondent of the *Archives of Pediatrics* narrates a case going to show that it is never well to be too hasty in judging of irregular vaccinal cases. At a little town in the north of France, called Matte-sous-Bois, a number of cases, nearly forty, took on unfavorable conditions of the wound after having been vaccinated with lymph taken from the arm of a certain child. The arm in each of these cases became œdematous and painful and the wound was judged by several practitioners to be an ecthymato-ulcerous manifestation, specific in character. There were hepetic ulcers on the arm in the region of vaccination, some of them as large as a half-dollar silver coin, and attended by free suppuration. Professor Leloir did not accept the diagnosis of the specific nature of the trouble and advised to keep the cases under observation for a few weeks. The time passed by, and in the course of three months, he was able to report that all the alleged chancroidal vaccinations had become healed and that no secondary symptoms had made their appearance.

Dr. Edward Schnitzer, better known as Emin Pasha, is expected to be able to return to Egypt during April or May. He signs his letters in some cases at least "Doctor Emin," a name which mingles his medical and political distinctions. By cable despatch, it is announced that he will hereafter enter the service of Germany in that part of East Africa, which is termed "the sphere of German influence," under Major Wissman.

TOPICS OF THE WEEK.

MR. GLADSTONE ON THE MEDICAL PROFESSION.

On Wednesday, March 26, Mr. Gladstone, as Senior Governor of Guy's Hospital, opened a new medical college in connection with that institution. Mr. Gladstone, who was accompanied by Mrs. Gladstone, was met at the entrance to the college by Mr. H. Hucks Gibbs, the President, and the members of the governing body, and conducted, amid the cheers of a large crowd, to the dining hall, where luncheon was served. In responding to the toast of "Prosperity to Guy's Hospital," the right hon. gentleman said he "could not possibly look back on the history of the medical profession without being impressed with the extraordinary degree in which it presents most special features to us. If we travel back—say two or three centuries—we find the medical profession almost without a recognized existence. In the competition with the other great professions, only a short time back, it was nowhere. The great name of Harvey was known, but as regards its social position and influence the time of Dr. Freind and Dr. Mead in the last century was almost the first period to which one could point at which the medical man of this country had assumed a position of influence and power and general recognition. That profession has been steadily rising in power and influence and general respect from that date to this, and it is my belief that it will continue to rise. The growth of civilization, as we call it, in a large and comprehensive, but also in a very loose and indefinite phrase, carries with it the production of many new forms of human infirmities and disease, and men's wants in the medical sphere are the opportunities of the medical man. His position is, in many respects, singularly fortunate and favorable. In the first place I am inclined to doubt for myself whether, as regards the mere question of remuneration, the medical profession does not offer on its threshold as good opportunities of, in some cases, even liberal return with as little risk as either of the other great professions." Having referred in appropriate terms to Sir William Gull, the right hon. gentleman said: "I am delighted when I hear of the creation of great fortunes in this country that are not merely commercial. It is an excellent thing that large fortunes are made in commerce, by the handling of money, by the supply of the country with material goods; but it is desirable that their power and influence should be qualified by the creation of other fortunes, such as now, almost for the first time, we find beginning to be created by medical men. I rejoice to think that the medical man, who spends his talent and strength as freely in the performance of his duty as any member of any other profession, will be able to make a competent and even large provision for his family. Another point upon which I congratulate the profession is its independence. It does not rely on endowment, but on its own exertions directed to meeting human wants. There is no great profession which has so little to say to the public purse, and which so moderately and modestly dips its hand into that purse. It is not only in the interest of the public, but of the profession itself, that it is eminently self-supporting; and, rely upon it, that principle of self-support does much to maintain its honor and independence, and to enable it to pursue its stately march in the times that have come and in the times that are coming, to form its own convictions, to act on its own principles without fear or favor, for the general benefit of mankind."—*The Lancet.*

THE CAUSE OF PALLOR.

Dr. Oppenheimer has published some careful observations on the blood of 109 pale female subjects (servant girls), conducted by means of Zeiss and Thomas' hæmocytometer and Gowers' hæmoglobinometer. He considers the lowest number of corpuscles per cubic millimetre in a normal state of health as four million, and the lowest amount of hæmoglobin in health 90 per cent. He also agrees with Gräber's dictum: "Number of corpuscles and hæmoglobin both diminished equals acute and chronic anæmia. Number of corpuscles diminished, hæmoglobin relatively increased, equals primary chlorosis or pernicious anæmia. Number normal, hæmoglobin diminished, equals chlorosis." In severe cases of chlorosis, with tendency to faintness, headache, heart symptoms, and œdema without albuminuria, the hæmoglobin varied from 30 to 50 per cent. In fifty-five of the cases the condition of the blood was normal. These patients were found to be suffering from phthisis, cardiac disease (compensated), gastric ulcer, and various affections of stomach, intestines or genital organs. Phthisis of itself—that is to say, before hæmorrhage or diarrhœa or profuse expectoration had come on—appeared to have no effect on the blood. An interesting result was obtained in connection with gastric ulcer. In simple ulcer the blood was normal, except when there had just been hæmatemesis, but in carcinoma of the stomach both the number of the corpuscles and the hæmoglobin were subnormal. Pale girls sometimes take iron for a long time without any visible improvement. Dr. Oppenheimer finds that such patients are not anæmic, but chlorotic from some uterine or other affection, so that when the blood is found to be normal it is advisable to make a vaginal examination. The pallor of patients with normal blood appears to be due to the insufficient filling of the cutaneous capillaries. From the observations of Dastre and Morat there would seem to be an antagonism between the blood-vessels of the skin and those of the abdomen, so that if one of these systems becomes dilated, the other, by an automatic reflex action, invariably becomes contracted. Because of the fact that irritation of the depressor nerve of the heart induces dilatation of the abdominal vessels and contraction of the cutaneous vessels, Dr. Oppenheimer believes that the pallor of phthisis, cardiac diseases and kidney mischief is due to reflex action. In these affections the heart has extra work to do, and this affects, by means of the depressor nerve, the vaso-motor centre, causing a diminution of the cutaneous flow, and, consequently, a dilatation of the abdominal vessels. The pallor observed in most inflammatory affections of the hypogastric viscera may probably be explained also by the reflex action of the hyperæmic abdominal vessels upon the calibre of the cutaneous vessels.—*The Lancet.*

THE DEVELOPMENT OF CULTIVATED MEN.

Upon his installation as President of Columbia College, a few days since, the Hon. Seth Low defined the aims of Columbia College in terms which apply to all of the better institutions of learning, as follows:

"She (Columbia) aims to develop the cultivated man, the educated gentleman; the man who, without being a specialist in anything, has been educated enough in all directions to be in sympathy with all learning; the man who knows enough about the past to recognize the value of it and of all experience, but who is not bound down by the past; the man who knows enough about the present to glory in its achievement and its promise, but who never forgets what it means of indebtedness to those who have gone before, to be 'in the foremost files of time.' In a word, she aims to develop the thoughtful and well informed citizen and to fill him with her own high aspirations as to his citizenship and his life. The splendid products of this work adorn the history of the city and the nation from the beginning of our career. Columbia College believes that *the specialist, because he is a specialist, ought first of all to be a broadly developed man.* Side by side with these men of a general culture and a professional training Columbia aims to contribute in increasing numbers still another precious type to the scholarship and citizenship of the times. She always has been doing something, she aims to do systematically more and more of the original work which belongs especially to our conception of a University in philosophy, in law, in science, and in every branch of learning. She aims to develop the patient student whose controlling desire it will be to add something to the sum of human knowledge."—*North American Practitioner.*

DO HEADS GROW WITH ADVANCED AGE?

Some amusing letters have appeared in a daily contemporary in regard to an alleged steady increase in the size of Mr. Gladstone's head, which, it is said, is rendered manifest by a progressive enlargement in the size of the hat required to cover it. The correspondence exhibits an extraordinary ignorance of well ascertained facts; for if there is one thing which would be acknowledged by all anatomists and physiologists, it is that the nervous system, like other parts of the body, undergoes atrophy with advancing age—an atrophy that pervades every tissue, and is as apparent in the thinning of the vocal cords that alters the voice to "childish treble," as in the shrunk shanks for which the "youthful hose, well saved, are a world too wide." No reason can be assigned why the brain should escape the general change that affects the digestive and the circulatory systems alike. Its attributes and faculties attain their highest excellence at or before mid-age, and from that time forth exhibit only a steady decline. To compare Mr. Gladstone with Napoleon, respecting whom a similar story is related, is absurd. The head of Napoleon may have grown between 20 and 45, because his brain was greatly exercised during the last ten years of the past century and the first ten of the present; but no calls have been made on Mr. Gladstone of late years at all comparable to the strain on the mental and bodily powers of the French Emperor during that eventful period. The ossification of the sutures of the cranium practically prevents increase of the volume of the brain in advanced life; and, even granting some slight increase, such increase would be compensated for by the attennation of the cranial bones which is well known to occur in old age. A change in form there may be, but none in size.—*The Lancet.*

PRECAUTIONS AGAINST CHOLERA IN CAUCASIAN RUSSIA.

According to the *Voljsky Vestnik*, 1890, February 21, the Caucasian governor-in-chief has issued an order of the day (*prikaz*) in which, while pointing out that cholera still prevails in Mesopotamia and Persia, and that it is very possible that the disease may spread to the Caucasian military district, he lays down a series of precautionary measures to be immediately adopted all over the district. The chief measures are as follows: Strict sanitary supervision of barracks, hospitals, and lazarettes; the formation of military sanitary commissions; arrangements for opening cholera wards and infirmaries; special courses for army surgeons and medical assistants (*feldshers*) in connection with the first aid to cholera patients, and so on.

PHARMACOPŒIAL REVISIONS.

There seems to be a general tendency at present among civilized nations to put their pharmacopœial houses in order. The last edition of our own Pharmacopœia is hardly five years old, and already an Addendum is required. Germany, Holland, Russia, and the Scandinavian countries are busily overhauling their formularies. Our Transatlantic cousins are determined not to be left behind in the race for medicinal perfection. It is announced that a meeting of the various incorporated and pharmaceutical bodies of the United States will be held at Washington in June of this year, for the purpose of revising the United States Pharmacopœia.—*British Med. Journal.*

SURGERY IN VIENNA.

In the last few years there have been twelve Cæsarean sections in Chrobak's clinics. They were all made after the Porro method, and in no case was child or mother lost. In the last thirty cases of uterine fibroids removed by the extra-peritoneal method of amputation there were but three deaths, and the mortality in simple ovariotomy has been reduced to almost *nil*. The most thorough antiseptic precautions are observed here, and to this are attributed these wonderful results.—Corr. *Medical News.*

THE HYGIENE OF INFANTS.

The Paris Academy of Medicine has just opened to competition a prize of the value of 1,000 francs for the best work on the hygiene of infants. The following is the question proposed: To determine what are, in the artificial feeding of infants, the value and the effects of raw milk, warmed or boiled milk respectively. The papers, which should be written in French, the other academical rules being observed, are to be forwarded to the Academy before March 1, 1891.

PRACTICAL NOTES.

CONCENTRATED SOLUTION OF MAGNESIUM SULPHATE AS AN ENEMA.

Dr. J. T. Watkins in his inaugural thesis presented to the Gynecological Society of Chicago, stated (*Medical News*) that after reviewing the literature, and reporting a number of cases in which the enemata had been used, he summarized its advantages as follows: 1°. Its action is local. 2°. It seldom fails, and produces copious stools. 3°. The time of action is short. 4°. The bulk is small, causing but little, if any, discomfort to the patient. 5°. It is as unirritating as a simple enema. Its certainty of action has become so well recognized in the New York Woman's Hospital that it has been used in nearly all the operative cases, as the cathartic preparatory to operation, for the last six months. It is best administered with the patient in Sims' position, the hips being elevated by a pillow; and when much tenderness exists it should be given through a large rubber catheter passed well up into the bowel. The patient is to be instructed to allow the abdominal muscles to remain lax, and, if necessary, the nurse is to keep up pressure over the anus to cause it to be retained for at least fifteen or twenty minutes. If the bowel should fail to expel the exuded liquid, a rectal tube should be inserted to allow its escape. Two ounces have been retained, without bad results; but Christison reports a case of death in a boy ten years old, where two ounces were taken by the mouth without being followed by purging. Where it is retained, the sphincter ani is likely to be strongly contracted, and great relief will follow forcible dilatation under an anæsthetic, which will also have a good effect upon the chronic constipation usually present.

The following is the formula he uses:

℞. Magnesii sulph. 2 ounces.
Glycerine 1 ounce.
Aquæ q. s. ad. 2 ounces.
℥.

The solution is made more readily, and its power of diffusion increased, by the addition of glycerine. He has used three and four ounces of the salt, but does not see that it has any advantages over the smaller amount.—*Cincinnati Med. Journal.*

THE OLIVE OIL TREATMENT OF GALL-STONES.

When some years ago some cases of successful evacuations of gall-stones in attacks of biliary colic following the ingestion of large quantities of olive oil were published they were received with some incredulity, which passed into ridicule when it was found that the oil itself was evacuated in the form of saponified pellets. Nevertheless, the practice was not abandoned in some quarters, and from time to time further successes were claimed for this singular form of medication. Recently Dr. Rosenberg has related three such cases (cited in the *Gaz. Hebd.*, No. 8). The first was a patient aged thirty-six, who had suffered from gall-stone for several years and had been treated without result. The gall-bladder was enlarged. The patient during two weeks drank a litre of olive oil with only once vomiting, and at the end of that period the liver and gall-bladder had notably diminished in volume. She had remained free from colic eighteen months after treatment. The second case was that of a workwoman aged thirty-seven, who was attacked with biliary colic. There was slight icterus, which always increased at the menstrual periods. The liver reached for three fingers breadths below the ribs. She was given 200 grams of the oil mixed with a little menthol and the yelk of egg. Next day the pains had disappeared and the liver had lessened in size. The jaundice and pruritis persisted; so another similar dose was administered, when these signs also disappeared. For several days after she passed biliary calculi. The like result was obtained in a third case, aged thirty-eight, after nine years' sufferiug from attacks of hepatic colic unrelieved by many "cures" at Marienbad and Carlsbad, although on each occasion she had passed some small calculi. Rosenberg states that of twenty-one cases treated on this plan there are only two in which it failed. He found by experiment that large doses of olive oil increase considerably the flow of bile and diminish its consistence. And he mentions, on the authority of Cantani, that in Italy, where olive oil is taken largely as an article of diet, gall-stone is less frequent than in other countries. Lastly, Rosenberg would not advise recourse to this remedy until other methods had been tried and failed; but, as he truly says, it may well be prescribed before advising recourse to cholecystotomy.—*The Lancet.*

Brunner (*Schmidt's Jahrbücher*), believes that *raw* catgut is easily rendered aseptic. His method of preparing it is as follows: The catgut is first scrubbed with a potash soap, then placed for twelve hours in ether, and then for a time in a 1:1000 watery solution of sublimate. It is preserved in a solution composed of sublimate 1 part, glycerine 100 parts, absolute alcohol 900 parts. Before using, the gut must be placed in 1:1000 watery sublimate solution. The author's experience with gut prepared in this manner shows that it is absolutely safe and unirritating to the tissues. Referring to the use of silk and linen sutures and ligatures, Brunner says that though they may be thoroughly disinfected by boiling, experience has shown that even then, if placed deeply in the tissue, they will occasionally excite suppuration.—*Med. News.*

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, January 22, 1890.

The President, W. W. Keen, M.D., in the Chair.

Dr. Andrew Graydon read a paper entitled

NOTES ON THE USE OF STATIC ELECTRICITY IN GENERAL PRACTICE.

To answer the many inquiries that come to me as to the results obtainable from this agent I present this paper. Living as we are in this age of discovery, when new drugs and operations are being brought to our notice, we are prone to overlook the older forces.

It is of one of these latter that I am to address you. It is a powerful auxiliary in the practice of medicine, and has been used for a number of years, but never in its present reliable form.

Much of the disrepute into which this form of electricity has fallen has been due to the unreliable form of the instrument with which we had to work. Changes of seasons, humid atmospheres, location of offices, lack of proper appliances, expensive outfits, have all tended to create in the physician's mind a distrust, or a disinclination to investigate by practical experience the merits of this agent. All these objections, to a very large extent, have been done away with in the Waite and Bartlett machine.

I have no theories to advance in this paper, simply giving what I have demonstrated. And I want to say, at the outset, that I was driven to the use of electricity because I could get results from it not to be had from other modes of treatment.

It is a fundamental truth that prejudice should never be allowed to stand in the way of progress; that no student should be hindered in his research after positive forces by the existence of a bias in the opinions of his fellows. The rules that bind the physicians to his work should not be arbitrary. Results sought for come along different lines, but they bring up at the same point. We are working primarily for curative ends; must we all tramp in the same ruts, or over the same foot-worn paths? Are there no roads to success but those laid out by other faithful workers? Certainly our medical training and experience have taught us that different ones are achieving success, but not by the same methods.

And now, in this matter of electricity, why is it that you will not allow these principles to have free play? Is it not a fact that the whole use of it has been handed over as the legitimate field for irregulars and quacks, and that when a physician in the fold does begin to use it, and use it as you would any valuable agent, medicine, or instrument, he is looked upon with, at least, suspicion.

Is it not so that the profession, as it is now beginning to use it a little, handle it, as it were, with gloves on, lest it soil its hands with the unhallowed dirt of bygone empiricism? I protest that this is not the spirit of fairness and equity, nor should it be that of the nineteenth century. In the face of this prejudice in the ranks of my profession I have followed the leadings of my inquiries, and what I have found is only that which any student and worker may. In these days when the spirit of progress is rife, and medicine is getting to be more and more scientific, when its followers are not satisfied with mere statements but demand proof, I protest against this prejudice, which hinders many from leaving the iron-bound environments laid down in the spirit of the past, intolerant and arrogant, to prove for themselves. There seems to be a fear in the minds of many, a dread, that to be known as one that works with electricity necessarily names them before the profession and public as electricians (and is the profession entirely blameless of encouraging the idea?). Is a physician, therefore a hydropathist because he may perchance, at times, order baths? Is he to be called a Thompsonian because vegetable drugs are found to be prescribed by him? or a homœopath in his ideas because he uses some of his remedies in granular form?

Cannot the general practitioner take advantage of the evolution that is going on around about him without having a sneering opprobrium given him? Are not some of the "foremost specialists" in Europe "men of large family practice?" and would you question their ability to diagnose a fibroma, and treat it by whatsoever means they elect, perhaps by electricity, or must they send their patient to a specialist pure and simple, who may not be able to write a prescription for an ordinary bronchitis?

It is time for physicians to break the thraldom and vindictiveness of the past, and encourage all workers who labor along various lines, as long as they follow truth and science, even if they do not run parallel with moss-grown principles.

I have been in society meetings when the mention of electricity roused a spirit of opposition only equalled in the fierce animal at the sight of red. Or, if not that, it is one of disbelief and contempt. Now this ought not to be. I do not make any extravagant claims for this agent. There is much we do not attempt to do with it; on the other hand, it can be proven to the fair and honest mind that there is a great deal it *will* accomplish, and that painlessly and surely; and that, too, in conditions where no curative agent obtains.

One of the first advantages that makes itself felt to the worker with the static current is the fact

that no disrobing or removal of any clothing is necessary. A lady can be treated, the current applied as directly to the part to be affected through the seal-skin coat as her dressing-gown. This is an important item to the busy physician and modest female. It is not necessary to remove rubber overshoes even to receive the full benefit of an application. You can see how this applies when the patient is treated with the "static insulation," or, as it may well be called, the static bath. Effects equally good are obtained by this method as in "general galvanization," or "general faradization," and with infinitely less trouble and exposure; since, in the latter two forms, almost complete uncovering of the body is essential, while in the first none. Let me explain what is meant by static bath or insulation: A patient sits upon an insulated platform connected by a chain or wire to either pole of the machine, we will say the positive. The negative is joined through another chain to the floor, if uncarpeted, or to the gas-pipe, and thus grounded. The poles of the machine, sliding rods, are then separated widely, and the wheels, glass plates, I should say, are set in motion by means of hand-power, electric, or water-motor. The patient, thus placed, is being charged with positive electricity. According to the conditions of the atmosphere the manifestations of the presence of the current is very apparent; for instance, the hair, unless oiled, stands on end, a tingling is felt throughout the body; more so in those parts unclothed. A séance of this kind, if kept up for ten or fifteen minutes, produces active perspiration.

In neurasthenic patients, in those whose avocations demand large inroads upon their nerve-force, consumption of it being greater than its generation, I have seen speedy and lasting results follow this mode alone, or combined, if indicated, with the spark, direct or indirect. I would not decry "general galvanization," or "general faradization"—they are very valuable methods of treatment, for which we are indebted to Drs. Beard and Rockwell, but in the matter of convenience and speedy results I prefer "static insulation" in a large number of cases. Then, too, it can readily be seen how a series of platforms can be arranged and connected, upon which a number of cases can be treated at the same time, to the saving of much time.

There is a sense of exhilaration following this process which is appreciated and remarked upon by the patient, that I have never seen from other forms. Dr. Morton, of New York, explains the results produced through the law of inhibition, remote parts affected by "polarizing the peripheral distribution of the sensory nerves."

While your patient is insulated the spark can be used by attaching the proper electrode. By using a wooden one, in shape of a point or ball, a very agreeable effect is produced, giving the sensation as of a shower of sand being driven gently against the body, or that of a stream of air. This either through the clothing or on the uncovered skin. These wooden electrodes I also use about the head and face, concentrating the action of the current over regions of the brain and organs of special sense, with good and never bad results. I have applied this form of electrode to eyes with the deep-seated, burning, boring pain, occasioned through nerve-tire from any cause, and obtained prompt and positive relief at one sitting.

As a pain reducer I have never seen static electricity equalled in a single agent. Let me illustrate by a case, trifling it may seem to you and me, but it was a condition which I was called upon to treat or turn away from as unworthy of notice. A young lady presented herself apologetically, in my office, with a bunion that crippled her. As she was a society girl, and very fond of dancing, it was a great annoyance to her. This trifling, little, insignificant bunion put a check on her pleasure. I was brought to see the fact, as it often happens in our practice, that what is almost contemptible in its littleness, enables us to get the confidence of the patient in graver matters. So it happened in this case. I insulated the lady, and, without removing the shoe during treatment, drew with the wooden ball electrode a fine spray of current directly from the painful spot. The application was pleasant, and followed by immediate relief, which was complete after four or five sittings.

Again, a lady, in running for a street car fell upon her knee. She came into my office about three hours after it had happened, with knee swollen, stiff, and painful. Through all the thickness of her clothing the same mode of application removed all pain.

A case of lumbago was given two treatments on consecutive evenings with the metal ball, sparks half an inch long, with the same happy results.

Cases of neuralgic type yield to the spark applied over the painful area. Headaches, not dependent upon stomach derangements, show results that are marvellous. In these, and brain affections generally, the treatment is by the douche and brush; and sometimes the wooden ball and point. I have seen cases, without number, of nervous headaches, in which the drain upon the nerve-forces has been enormous, in the merchant, physician, lawyer, actor, student, housewife, in male and female, yield promptly to this treatment.

In that class of senile headaches which defy routine treatment the results are most happy.

With cerebral hyperæmia I have had the best of effects. Stimulating the vaso-motors, it sweeps on the stagnant current, and equalizes the

circulation, thus relieving the pain and pressure. A case in point will illustrate the treatment of this class of cases:

Mrs. J. has been suffering from chronic cerebral meningitis for six or seven years. During this period she has been treated by the best men in the city. Everything that routine treatment could devise was used. Counter-irritation of every degree of severity was applied, until, as she says, "they told me there was nothing else to be done, and I must suffer all my remaining life." About three years ago she was put upon the static current against the wishes of her physician, who opposed electrical treatment. It is the only treatment that has ever given any alleviation from, and moreover lengthened the intervals between, the agonizing headaches consequent upon the congestive condition, amounting to a mild delirium. Very true, it is only palliative, but before she did not have even *that*. When the treatments are neglected for any length of time, she has a frightful attack of congestive headache.

The *modus operandi* in her case is to insulate her, and with a wire brush connected with a chain to one pole of the machine, the platform upon which she sits to the other pole. The current is drawn from directly over the painful areas, not, however, allowing her to feel it, as the current is not broken, since the operator puts himself in the circuit. I supplement this with the douche.

As I say, I have found this treatment very satisfactory.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE.

Letter from Los Angeles, Cal.

The World's Health Resort.

To the Editor:—The healthiest climates are those in which the winter is not very cold and the summer not very warm and in which consequently there is no great or continual strain on any one class of organs.

The climate of Persia is reputed to be delightful as any on the face of the earth. For nine months a cloud seldom appears in the sky, and during the other three months it is more or less cloudy.

The Mediterranean basin is noted for its mild winters and cool summers and its sunny skies, yet the prevailing winds are its only drawback. Along the para in South America the climate is warm with plenty of sunshine, with a daily shower of rain about four o'clock every afternoon, and yet it is not the most desirable of places for health.

In Southern California there is six months of continual sunshine, and during the other six months while there are occasional rains, say thirty or forty days of rain during the rainy season, the other days are nearly all those of sunshine.

Those who have traveled much and visited Persia, the Mediterranean shores and other health resorts declare that Southern California, along the Pacific coast, has a climate which for the all-year-round is superior to any other on the face of the globe. During the winter we are protected from the cold north winds by the high coast range of mountains and favored by the warm winds from the desert and the warm ocean streams which hug the shore. During the summer the cool ocean breezes which blow daily over the land refresh us. If it were not for this afternoon wind our climate would not be so balmy. The climate is not principally dependent on astronomical facts nor on the sun's position or inclination, but it is dependent on the relation the land bears to the mountain ranges and its position to the ocean and its gulf streams. We are favored with those conditions of temperature, atmosphere, wind, soil, moisture, electricity and geographical position which unite in harmony to make the climate of Southern California almost perfect and uniform. There is literally only two seasons, summer and winter, but the winter is really spring time, which begins with November and ends with April. The mean average temperature for these months is only about fifteen degrees cooler than for the summer months. There is no cold weather, very seldom a frost, never any snow, except up in the mountains at a high elevation. With the winter months begin the rains, but the rainy days are few. After the beginning of the rains vegetation springs up all over the land, and instead of the ground being covered with snow it is a beautiful land of verdure, of thriving grain crops, of fragrant orange groves, a land where grows the olive, the banana, the fig and the pomegranate, a land of flowers and semitropical plants and warm sunshine days; where the warble of the mocking bird enchants the soul of the wearied and afflicted, and his sweet melodies during the night sings the restless mortals into sweet slumbers.

The temperature at midday during the winter reaches the eighties, and while all is spring time in the valleys winter's snowy bounds reigns supreme up in the mountains at the short distance of twenty-five miles from Los Angeles. The mountain peaks are capped with pure white snow, and the varied scenery of summer with all its thriving crops of semitropical fruits and flowers and palms in the valleys, and winter's snowy bounds only twenty-five miles away, the scenery is one of sublime grandeur.

The summer begins with May and ends with October, during which time there is no rain. The average mean temperature for these months is about 67° Fahrenheit, with a daily range of

about 25°. There are no long spells of persistent or intense heat. The temperature rarely reaches the nineties, and when it does it is only for a couple of hours between the hours of 10 A. M. and 2 P. M., after which there is always a cool sea breeze. With such weather we are relieved of that physiological strain on the skin, digestive organs and liver which the spells of persistent and oppressive hot summer days in our eastern cities render mankind prone to, especially diseases of the digestive system. The atmosphere at all times is pure, clear, fresh, calm, yet highly tonic, with a low relative humidity during the hottest part of the day, giving us a moderately dry climate as regards atmospheric humidity. The prevailing winds during the summer are from the ocean, which is cool and refreshing. As night comes on the breeze ceases and the evenings are pleasant, cool, quite comfortable and delightful. The mornings always greet one with a bright rising sun from a refreshing sleep. As there is always a cool ocean breeze it is at all times cool in the shade. The ice pitcher is not needed; for to obtain a cool drink of water it is only necessary to keep the water tank in the shade.

From the above facts we learn that it is not cold in winter nor hot in summer. More than this the climate contains those three essential elements of a perfect climate, namely: dryness, equability and purity of atmosphere. This varied climate is remarkable. Within a radius of fifty miles, yes, in some places only twenty-five miles, embraces almost every variety of climate.

Summer in the valleys and winter up in the mountains from the sea to an elevation of 6,000 feet within a distance of forty miles, and a very attractive country with its novelty and beauty of its varied wide scenery of sea and rolling valleys, and amphitheatre of mountains with summer's sunny land and winter's icy mountains within a day's drive. The climate is truly so varied that each mountain, plain and valley, and each city, village and house seems to have a climate of its own. It is only left to each individual person to select for himself that locality which is best adapted to his own peculiar constitution.

The atmosphere is charged with positive electricity, negative electricity is very feeble or *nil*, consequently thunderstorms very rarely occur. The atmosphere contains very little of that deleterious gas-autozone, and where the atmosphere is free from autozone no cloud or fog can form and the oxygen of the air is in a state of purity, hence the healthfulness of the climate. Everyone knows that in localities where clouds and fog predominate such localities are naturally miasmatic and engender diseases of all kinds.

The atmosphere is aseptic, proof of which may be seen in the meat market, where even during the hottest summer days the fresh meats are continually exposed to the air, hanging around in the shops day after day until it becomes cured, or as they term it here, "jerked." The meat is not put in ice boxes or refrigerators to keep it sweet and fresh, but it is kept sweet and fresh and free from putrefaction by hanging in the open air. The soil is principally a dry sandy soil, very porous and well drained by a gradual slope of the land toward the sea. There is no stagnant pools of water for the development of malaria and other miasmatic diseases. For a place of residence for the health, pleasures, and comforts of life Southern California is truly a paradise. There is every advantage for the pleasures of out door life. There are more than three hundred sunshine days in the year to be out doors. There is every facility for exercise such as riding and driving over the beautiful valleys, walking and climbing mountains, hunting and fishing, rowing and sea bathing, which can be indulged in every month in the year, yachting and the pleasures of short ocean voyages along the coast and to the coast islands.

Along the foot-hills within a few miles of Los Angeles is one of the most glorious places for a home for the invalid. Here everything favors health. The consumptive lives in ease, and if he comes here in due time he is almost sure to regain his health and be free from further progress of the disease, and only a few miles from the sea or city, he can conjoin country or mountain life with city or sea life.

For the invalid a home in the country is preferable to the city. Although Los Angeles is so situated, and with all its modern improvements now under way as regards paved streets, drainage, sewerage, suburban hotels, street railway systems, seaside resorts and drives, it is destined to become the largest and most desirable health resort in the world. WM. H. DUKEMAN, M.D.

114 W. 6th street, Los Angeles.

Nephrectomy for Fibroid—Successful.

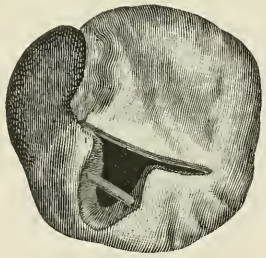
To the Editor:—The appended report of a remarkable case of nephrectomy, which is published in the current number of the *Indiana Medical Journal*, I deem worthy of a more extended notice, and therefore request that you publish it in THE JOURNAL. Yours truly,

JOSEPH EASTMAN, M.D.

Indianapolis, Ind., April 10, 1890.

"*Case 129.*—Mrs. D., aged 49 years. Referred by Dr. Wands. Operation November 6, 1889. Large nodular tumor in right hypochondrium. Symptoms pointed to cancer of liver. Incision first made 3 inches long, then extended to 8. Introduced the finger, and found tumor adherent in every direction. Separated the adhesions from the abdominal wall, finding that the tumor developed from the region of the right kidney behind the peritoneum. Tearing open the peri-

toneum, separating the extensive adhesions, dealing with many bleeding points and with great difficulty, I was enabled to lift the tumor out of its bed, finding that it developed from the lower half of the right kidney. I ligated the renal arteries with strong iron dyed silk; removed kidney with the tumor. I then plunged a pair of sharp-pointed scissors through the back at the most dependent point of the cavity, from which I removed the tumor, expanding them large enough to introduce the finger; then drew a large rubber drainage tube through the opening, stitching the tube to the external integument; put a glass drainage tube in abdominal wound, having it extend well down into the cavity. Closed the wound with silkworm gut. The patient left the table with pulse of 90. Dr. William Wands kindly assisted me in the operation, the senior class of the College of Physicians and Surgeons also present. The tumor weighed nine pounds, and a cavity connected with the pelvis of the kidney contained three pints of purulent urine. Experts class the tumor as "rhabda myoma," the so-called *striped* myo-sarcoma. (See Greig Smith, p. 496.)"



Represents tumor, Case 129.

American Medical Editors' Association.

To the Editor:—The annual meeting of the American Medical Editors' Association will be held in the Dental Department of the Vanderbilt University, at Nashville, Tenn., Monday evening, May 19, 1890.

Every medical editor in the United States is cordially invited to attend. Matters of great importance to the Editorial Guild are to be presented and discussed. Papers from Dr. F. L. Sim, of Memphis, Tenn., Dr. T. D. Crothers, of Hartford, Conn., and others, will form the programme. Arrangements are being made by which a dinner will be held at either the Maxwell House or Duncan House after the annual meeting. Those desiring to participate in the latter will please send their names on at as early a date as possible.

Will the various journals of the country please make a note of this announcement?

I. N. Love, M.D., President.

Office of the President, 3601 Lindell Boul., St. Louis, Mo.

BOOK REVIEWS.

Insomnia and Its Therapeutics. By A. W. Macfarlane, M.D., F.R.C.S., Edinburgh; Fellow Royal Medical and Chirurgical Society, London; Examiner in Medical Jurisprudence, Univ. Glasgow, etc. Pp. xv, 366. London: H. K. Lewis. 1890.

This work, although addressed by its author to students and junior practitioners of medicine, will be read with interest and profit by all classes of physicians. The author's style is particularly attractive and he has well covered the ground of his subject. He himself makes great use of the character of sleep as a diagnostic point, and in this connection gives many useful hints. The most noticeable feature of the work is the great attention paid to treatment; insomnia is first studied in connection with each one of the various diseases upon which it depends, and then in every instance the character of the treatment to be adopted follows. The younger practitioners especially will doubtless be pleased to find that the author has given a large number of his own favorite formulæ.

Massage and the Original Swedish Movements. By Kurre W. Ostrom, from the Royal University of Upsala; Instructor in Massage and Swedish Movements in the Hospital of the University of Pennsylvania and the Philadelphia Polyclinic, etc. Pp. vi, 97. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1890.

In this volume the author gives an excellent description of the methods of massage and Swedish movement, together with their applicability to various diseased conditions of the body. These methods are rapidly becoming popularized in our own country, and the perusal of such a book as Mr. Ostrom has written will be of great advantage to physicians, for whose use it is mainly intended.

Manual of Skin Diseases. With Special Reference to Diagnosis and Treatment. By W. A. Hardaway, M.D., Professor of Skin Diseases in the Missouri Medical College and in the St. Louis Post-Graduate School of Medicine, etc. Square octavo, pp. viii, 434. Price $3. St. Louis: Theo. F. Lange. 1890.

The professors of dermatology in St. Louis seem to be very active at present in a literary way, for besides many papers and clinical reports in the journals, we have been favored with two text-books within the last three months. The present volume is the outgrowth of the author's desire to place a convenient work on dermatology in the hands of his students. Having enlarged upon his original plan he now offers a well writ-

ten and extensive treatise on this subject, and one which will be found serviceable alike to students and general practitioners. The work is arranged in three parts, including an introduction to the study of skin diseases, an alphabetical arrangement of diseases for ready reference, and an appendix containing additional formulæ and a diet table.

ASSOCIATION NEWS.

American Medical Association, Forty-First Annual Meeting.

Section of Laryngology and Otology.

1. "The Value of Different Operations for Nasal Stenosis," by Max Thorner, M.D., Cincinnati, Ohio.

2. "An Anomalous Condition of the Human Voice," by Alexander W. MacCoy, M.D., Philadelphia, Pa.

3. "Suggestions on the Use of Electricity in Ear Diseases," by E. L. Jones, M.D., Florence, Ala.

4. "Glandular Hypertrophy at the Base of the Tongue," by A. B. Thrasher, M.D., Cincinnati, Ohio.

5. "Fractures and Concussions (Contra-Coup) of the Temporal Bone as a Cause of Deafness," by Laurence Turnbull, M.D., Philadelphia, Pa.

6. "The Galvano-Cautery and its Use in Certain Nasal Affections," by Wm. Cheatham, M.D., Louisville, Ky.

7. "Pathology and Treatment of Tinitus Aurium," by A. A. Hubbell, M.D., Buffalo, N. Y.

8. "The Importance of Surgical Means Applied to the Naso-Pharynx in the Relief of Naso-Pharyngeal and Middle Ear Catarrh," by C. W. Richardson, M.D., Washington, D. C.

9. "How Can We Best Utilize for Scientific Study the Clinical Material so Abundant in Large Dispensaries?" by O. B. Douglas, New York, N.Y.

10. "Salol in Acute Pharyngitis and Tonsillitis," by Jonathan Wright, M.D., Brooklyn, N.Y.

11. "Imperforate Auditory Canal," by Seth S. Bishop, M.D., Chicago, Ill.

12. "On Laryngismus," by J. H. Bryan, M.D., Washington, D. C.

13. "Hygiene of the Upper Air Tract," by J. E. Schadle, M.D., St. Paul, Minn.

14. "Note on Nasal Hæmorrhage," by Frank H. Potter, M.D., Buffalo, N. Y.

15. Discussion on Croup and Diphtheria:

I. Their Identity, by D. Bryson Delavan, M.D., New York, N. Y.

II. Their Duality, by J. Solis-Cohen, M.D., Philadelphia, Pa.

III. Treatment: (*a*) Medical, by William H. Daly, M.D., Pittsburg, Pa. (*b*) Surgical, by F. E. Waxham, M.D., Chicago, Ill.

Papers have also been promised by R. Norris Wolfenden, M.D., London, England; H. Holbrook Curtis, M.D., New York; Carl Seiler, M.D., Philadelphia; E. L. Shurly, M.D., Detroit; Clarence C. Rice, M.D., New York, and M. F. Coomes, M.D., Louisville, Ky.

All those contemplating reading papers before this Section are requested to forward their titles to the Secretary at once.

JOHN O. ROE, M.D., Chairman,
28 N. Clinton street, Rochester, N. Y.
FRANK H. POTTER, M.D., Sec'y,
273 Franklin St., Buffalo, N. Y.

Section of Dental and Oral Surgery.

1. Address, by Chairman, J. L. Williams, of Massachusetts.

2. "Relation of Tropho-Neuroses to Disease of the Mouth and Jaws, With Special Reference to Syphilitic Necrosis," by G. Frank Lydston, M.D., of Chicago.

3. "How the Vascular Supply is Connected With the Teeth," by A. O. Hunt, M.D.

4. "Vascular Tumors of the Mouth, and Treatment by Injection," by John S. Marshall, M.D., of Chicago.

5. "Electro-Therapeutics," by John L. Gish, M.D.

6. "The Value of Illustration in the Lecture Room," by L. D. McIntosh, M.D., of Chicago.

7. "Adenoid Growths and their Effect on the Mouth," by E. E. Briggs, M.D.

8. "Cure for Cleft Palate by a Double Flap Operation and Closure with the Buried Tendon Suture," by Henry O. Marcy, M.D., of Boston.

9. "Hereditary Dental Anomalies," by Wm. S. Sherman, M.D.

10. "Diseases of the Gums, and their Treatment," by J. Taft, M.D.

11. "Irregularities of the Teeth Caused by Neurotic Conditions," by E. S. Talbot, M.D., of Chicago.

J. L. WILLIAMS, M.D., Chairman.
EUGENE S. TALBOT, M.D., Secretary.

Pediatric Section.

1. "Practical Points in the Sanitation of Child Life," by J. Berrien Lindsley, M.D., Nashville, Tenn.

2. "Sulphonal in the Diseases of Children," by Wm. C. Wile, M.D., Danbury, Conn.

3. "Untwisting as a Method of Reduction of Club Foot" (with exhibition of apparatus), by Chas. F. Stillman, M.D., Chicago, Ill.

4. "Congenital Phimosis with Adherent Prepuce, and some of its Effects," by E. C. Lemen, M.D., Upper Alton, Ill.

5. "Summer Diseases of Children," by W. R. Mackenzie, M.D., Chester, Ill.

6. "Intestinal Diseases of Children," by J. B. Prichard, M.D., of St. Louis, Mo.

7. "Constipation in Children," by George F. Cook, M.D., Indianapolis, Ind.

8. "A Plea for Operative Interference in Peritonitis, with Especial Reference to Peritonitis of Obscure Origin in Children," by G. Frank Lydston, M.D., Chicago, Ill.

9. Address by the President of the Section on "School Life in Relation to Child Life."

MISCELLANY.

Association of American Physicians. — The fifth annual meeting of the Society of American Physicians will be held at the Army Medical Museum Building, Washington, D. C., on the 13th, 14th and 15th of May, 1890. The preliminary programme is as follows:

1. The President's Inaugural Address, Samuel C. Busey, Washington.

2. Consideration of the Revised Constitution.

3. Disturbances of Sleep (discussion)—*Referee*, S. Weir Mitchell, Philadelphia; *Co-Referee*, Charles F. Folsom, Boston.

4. Methods of Diagnosis in Diseases of the Stomach (discussion)—*Referee*, Francis P. Kinnicutt, New York; *Co-Referee*, F. C. Shattuck, Boston.

5. Inflammations of the Appendix and Cæcum and the Duty of the Physician regarding them, Norman Bridge, Chicago.

6. Anæsthetic and Non-Anæsthetic Hysteria, Charles L. Dana, New York.

7. Seizures Characterized by Shock and Loss of Consciousness, Israel T. Dana, Portland.

8. The Diathetic Cause of Renal Inadequacy, I. N. Danforth, Chicago.

9. Antisepsis in Midwifery, William T. Lusk, New York.

10. Varicose Aneurism of the Arch of the Aorta, William Pepper and J. P. C. Griffith, Philadelphia.

11. Natural History of Typhoid Fever, James E. Reeves, Chattanooga.

12. What can and should be done to Limit the Prevalence of Tuberculosis in Man? Edward O. Shakespeare, Philadelphia.

13. Migraine, Wharton Sinkler, Philadelphia.

14. Etiology of Pleurisy, especially in Relation to Tuberculosis, A. A. Smith, New York.

15. Report of Cases of Angio-Neurotic Œdema, Samuel B. Ward, Albany.

16. Notes of a Case of Acronugaly, by J. E. Graham, Toronto.

17. A Case of Acute Pancreatitis, by R. H. Fitz, Boston.

18. Demonstrations of Pathological Specimens, W. T. Councilman, Baltimore.

The Constitution provides that papers shall not exceed twenty minutes in the reading.

LETTERS RECEIVED.

Dr. A. G. Kimball, Battle Creek, Mich.; Dr. C. E. Lundgreen, Denver, Col.; Dr. Wolfred Nelson, New York; Dr. F. S. Crossfield, New London, Conn.; Dr. W. O. Davis, New York; Sharpe & Smith, Chicago; Louisville & Nashville Railway Co., Nashville, Tenn.; Dr. Henry I. Bowditch, Boston; the Antikamnia Chemical Co., St. Louis, Mo.; Dr. Jerome Cochran, Montgomery, Ala.; Dr. R. M. McFall, Mattoon, Ill.; Dr. R. H. Harrison, Columbus, Tex.; Rio Chemical Co., St. Louis, Mo.; Thomas Leeming & Co., New York; R. G. Dun & Co., Chicago; Annals of Gynecology and Pædiatry, Philadelphia; The Dixie Doctor Co., Atlauta, Ga.; Dr. J. A. Freeman, Millington, Ill.; La Lumiére Electrique, Paris, France; State Medical Society of Arkansas, Little Rock, Ark.; Société Obstétrical et Gynécologique de Paris, Paris, France; Dr. C. H. Hunt, Stanwood, Ia.; Dr. John Wright, Clinton, Ill.; Dr. A. A. Burge, Osanda, Ga.; Ward Bros., Jacksonville, Ill.; August Spankus, Milwaukee, Wis.; Dr. Richard J. Dunglison, Philadelphia; Dr. Alfred Stille, Philadelphia; Dr. F. J. Groner, Big Rapids, Mich.; J. H. Vail & Co., New York; Dr. J. H. Ludwig, La Porte, Ind.; the Upjohn Pill and Granule Co., Kalamazoo, Mich.; the Wm. S. Merrell Chemical Co., Cincinnati, O.; Chesebrough Manufacturing Co., New York; Dr. John F. Moran, Washington, D. C.; Waite & Bartlett Manufacturing Co., N. Y.; Dr. J. Berrien Lindsley, Nashville.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 5, 1890, to April 11, 1890.

Capt. Arthur W. Taylor, Asst. Surgeon, is granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Div. of the Pacific, by direction of the Secretary of War. Par. 10, S. O. 78, A. G. O., Washington, April 3, 1890.

Major Robert M. O'Reilly, Surgeon, leave of absence granted in S. O. 24, October 16, 1889, amended by S. O. 252, October 26, 1889, both from this office, is extended one month, by direction of the Secretary of War. Par. 30, S. O. 81, A. G. O., April 7, 1890.

First Lieut. Nathan S. Jarvis, Asst. Surgeon, leave of absence granted in S. O. 34, Dept. of the Missouri, March 20, 1890, is extended fifteen days, by direction of the Secretary of War. Par. 22, S. O. 81, A. G. O., Hdqrs. of the Army, April 7, 1890.

By direction of the Secretary of War, Capt. Marshall W. Wood, Asst. Surgeon, is relieved from duty at Ft. Randall, S. Dak., and will report in person to the commanding officer, Ft. Meade, S. Dak., for duty at that post, reporting by letter to the commanding General, Dept. of Dak. Par. 24, S. O. 82, A. G. O., Hdqrs. of the Army, Washington, April 8, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 12, 1890.

Asst. Surgeon S. S. White, detached from the U. S. S. "Minnesota" and wait orders.

Asst. Surgeon H. N. T. Harris, ordered to the U. S. S. "Minnesota."

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending April 5, 1890.

Surgeon P. H. Bailhache, to represent Marine-Hospital Service at meeting of California State Board of Health. April 4, 1890.

Surgeon Walter Wyman, to proceed to Wilmington, Del., on special duty. March 27, 1890.

P. A. Surgeon P. M. Carrington, granted leave of absence for thirty days on account of sickness. March 28, 1890.

P. A. Surgeon W. J. Pettus, granted leave of absence for sixty days, with permission to go abroad. April 2, 1890.

Asst. Surgeon F. C. Heath, to rejoin station, Detroit, when relieved at Cleveland. April 3, 1890.

Asst. Surgeon J. J. Kinyonn, to proceed to Wilmington, Del., on special duty. March 28, 1890.

Asst. Surgeon J. B. Stoner, relieved from special duty on floating hospital "Stevens;" ordered to assume command of the Service at Pittsburgh, Pa. March 28 and April 4, 1890.

Asst. Surgeon A. W. Condict, to proceed to Cleveland, O., for temporary duty. April 2, 1890.

Asst. Surgeon G. M. Guitéras, when relieved at Pittsburgh, Pa., to proceed to Marine-Hospital, New York, N. Y., for temporary duty. April 3, 1890.

Omitted from previous report:

P. A. Surgeon W. J. Pettus, promoted, and commissioned P. A. Surgeon by the President February 26, 1890.

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ADDRESSES.

BENJAMIN RUSH.

An Address delivered before the American Medical Association at its Annual Meeting in Newport, R. I., June, 1889,

BY WILLIAM PEPPER, M.D., LL.D.,

PROVOST AND PROFESSOR OF THEORY AND PRACTICE OF MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

Time, which destroys so much, has dealt kindly with the fame of Benjamin Rush. Like his great master Sydenham he was distinguished during life, and distinguished not through the absence of able rivals, but owing to surpassing power. But as with all true renown his fame has endured and grown, and it seems not unlikely that he will remain forever with us, not, it may be, as the greatest of our physicians, but as the first of our great physicians.

His life of ceaseless, restless activity demands and will repay full description when all interdiction is removed from his private papers. I hazard the prediction that the largest publicity will but show more clearly the purity and intensity of his patriotism, the vivid and unselfish interest shown by him in every question which affected the happiness, the honor, or the prosperity of his country; and the undaunted conrage which made it impossible for him to be away from the front in every struggle. But it seems to me that the political services[1] and influence of Rush—important as they were—have comparatively little to do with the position he holds with us to-day. He never was a politician, though often engaged in public affairs. His high spirit, his impetuosity, his transparent character kept him for the most part aloof from political intrigues and dealings in which they would have prevented his success. He never sought political office or preferment. The appointments he held were alike honorable, laborious and unprofitable. He signed the Declaration of Independence, not merely because he was a member of Congress, but because he had been appointed for that specific purpose by the State Convention of Pennsylvania. The appointment followed the presentation of his report, as chairman of the committee to consider the question whether it had become expedient for Congress to declare Independence. This report is a vigorous and animating production; and so closely does it foreshadow the leading features of the Declaration of Independence, that it might appear to be a protocol or rough draft of that immortal document. He discharged with great energy and efficiency the laborious duties of his positions as Surgeon-General, and later as Physician-General of the Army of the Middle Department; and like Washington and Franklin, and others in those primitive days, he refused pay for his public services. During those memorable years he wrote vigorous and influential papers and letters on the organization of the General and State Governments; but even then he was diligent in medical observation and writing.

He shared the doubts of Samuel Adams and

NOTE.—I am indebted to the family of Dr. Rush for the opportunity of consulting and making extracts from some of his correspondence.

A careful examination has also been made of the large collection of letters (for the most part letters written to Dr. Rush) deposited in the Ridgway branch of the Philadelphia Library; with the exception of a single volume presumably containing matter, personal and political, of interest to the historian and biographer which is there held in reserve.

I may add that in order to place myself in a fair position to judge of his work and influence, his entire published writings have been read twice—once rapidly, once critically; and all accessible publications concerning him have been, in very large number, consulted.

[1] The importance and extent of these services may be gathered from this brief statement:

In 1776 (act. 31) he was a member of the Provincial Conference of Philadelphia, and of the committee to which was referred the great question, whether it had become expedient for Congress to declare Independence. He was chairman of the committee; the report they submitted was adopted and sent to Congress. This report includes near y all that has been so much praised in the Declaration of Independence, of which it might appear to be the protocol. He was appointed by the State Convention a member of Congress, in order that he might sign that Declaration.

He was appointed Surgeon-General of the Army of the Middle Department in 1776; in 1777 he exchanged this position for that of Physician-General.

He published important papers on public events; especially four powerful letters on the Pennsylvania Constitution of 1776; a remarkable address in 1785 entitled "Considerations on the Test Laws of Pennsylvania;" and many able though shorter articles in 1786–1787 in favor of the adoption of the Federal Constitution. He was a member of the Convention of Pennsylvania for the adoption of that instrument which he thus describes: "It is a master-piece of human wisdom, and happily accommodated to the present state of society. I now look forward to a golden age. The new Constitution realizes every hope of the patriot and rewards every toil of the hero. I love my country ardently, and have not been idle in promoting her interests during the session of the Convention. Everything published in all our papers, except the *Foreign Spectator*, was the expression of our Federal principles." Allusion has been made elsewhere to his successful labors for amelioration of the penal code; it was apparently in large part to accomplish this and the establishment of public schools that he accepted membership in the State Convention in 1787 for the formation of a State Constitution. He was then 42 years of age, and from that time onwards, although he always took a lively interest in every important public question, he devoted his whole energies to the cause of medical science and medical education.

Richard Henry Lee as to the military genius of Washington; and his unshrinking courage and vehement spirit led him into positions and expressions which he doubtless regretted later when time and events had demonstrated the rare qualities of the great leader. But at the same time (1785), he projected the Philadelphia Dispensary, following the example of Franklin in regard to the Pennsylvania Hospital, and devoting himself with equal vigor and success to the collection of funds. He carefully prepared the public mind by describing the advantage of such an institution, for it was the first of its kind in the United States. Public interest being aroused, combined efforts secured such liberal contributions that the Dispensary was placed upon a permanent basis, and for more than a century has continued its unostentatious but precious work. It is needless to remark that its example has been followed in hundreds of places. He had already attained such prominence in medical circles that in 1789, when the College of Physicians was established, he was called upon to prepare an address on the objects of the institution, which is published in the Transactions for 1793. It is a vigorous production, altogether worthy of the occasion, and with far-sighted sagacity it indicates the lines of development along which that venerable institution has grown into such gratifying prosperity.

He was profoundly interested in moral philosophy, and in 1787 read to the Philosophical Society, of which he was one of the most active members, an essay on the "Influence of Physical Causes on the Moral Faculty," which was of such remarkable originality as to attract the widest attention here and abroad. It deservedly occupies the position of a classic. In the same year he became a member of the Convention of Pennsylvania for the adoption of the Federal Constitution and of that for the forming of a State Constitution. He labored, spoke and wrote incessantly, enthusiastically and forcibly,—not for partisan or personal ends, but in obedience to the dictates of a lofty sense of patriotic duty, and to have the chance to press the reform of the penal code, and to promote public education.[2]

He was among the first to oppose capital punishment. Little can be added to the indictment he brings against it as ineffectual and injurious in its influence. Nor did he limit himself to denouncing evils; his mind was essentially practical and his lively imagination was chiefly occupied with suggestions of solid utility. His "Inquiry into the Effects of Public Punishment upon Criminals and upon Society" closes with a powerful plea for a truly reformatory system of punishments. He exclaims, "I have no more doubt of every crime having its cure in moral and physical influence than I have of the efficacy of the Peruvian bark in curing intermittent fever. The only difficulty is to find out the remedy or remedies for particular vices." It is one of Rush's highest distinctions to have contributed powerfully, and probably more than all others, to the amelioration of the penal code subsequently effected.

These were years of activity which we find it hard to parallel, for the range of subjects covered, the vigor of grasp with which each is handled, and the far-sighted sagacity and practical wisdom shown in the reforms urged or the original measures suggested. If he had no other claim to fame, Rush would stand high as a philanthropist and social reformer. He was inspired by no love of notoriety, not deterred by any dread of unpopularity. He denounced the evils of slavery as early as 1771 and was, with Franklin, one of the founders of the Society for the Protection of Free Negroes; of this he was annually elected president after Franklin's death. He espoused the cause of non-jurors, and under the title of "An Inquiry into the Consistency of Oaths with Reason and Christianity," he presented a masterly and convincing argument against such tests. He was a discriminating but decided opponent of the use of ardent spirits. He did not aim at the total prohibition of stimulants, as he held

[2] The important services rendered to education by Rush merit a separate memoir. He advocated consistently the highest practicable standard of medical education. In 1792 he urged the importance of thorough preliminary study, embracing the modern as well as the dead languages. He insisted upon the study of botany, zoology, and comparative anatomy. With equal force he urged the study of medical jurisprudence, and he was a pioneer in the study and teaching and practice of psychiatry. The admirable address of Dr. C. K. Mills on Rush in American Psychiatry, read before the Medico-Legal Society of New York, Dec. 8, 1886; and the opening chapter in Hack Tuke's recent work (The Insane in the United States and Canada), which is an extended and judicious eulogium upon Rush, render it unnecessary to allude further to this, which must have consumed an immense amount of his time and energy, and which would of itself constitute a just claim to lasting fame.

Veterinary science found in him its earliest champion in America. Throughout his life he pleaded eloquently for the protection of animals from cruelty. In his inquiry into the influence of physical causes on the moral faculty in 1786 he exclaims, "I am so perfectly satisfied of the truth of a connection between morals and humanity to brutes, that I shall find it difficult to restrain my idolatry for the legislature that shall first establish a system of laws to defend them from outrage and oppression." In 1807, he delivered the lecture introductory to his course "Upon the Duties and Advantages of Studying the Diseases of Domestic Animals and the Remedies Proper to Remove them;" and after an eloquent statement of the importance of the subject, and an allusion to the fact that up to that time no veterinary school had yet been established in the United States, he concluded with the following words: "I have lived to see the Medical School of Philadelphia emerge from small beginnings and gradually advance to its present flourishing condition, but I am not yet satisfied with its prosperity and fame, nor shall I be so, until I see the Veterinary Science taught in our University." This wish was not realized during his lifetime—nor until 1884, when the Veterinary Department of that Institution was established.

But it was not only in the promotion of medical education that Rush was strenuous. He published important and influential papers on the establishment of public schools; upon the mode of education proper in a republic; upon the study of the Latin and Greek languages, with hints of a plan of liberal instruction without them; and upon allied subjects. He advocated the establishment of a National or Federal University of which all office holders should be graduates (Mss. letter); and he urged and labored for the establishment and prosperity of several colleges in Pennsylvania, in addition to the long and valuable services he rendered to the University of Pennsylvania. He served on the committee to raise funds for the establishment of Franklin College at Lancaster (now the justly prosperous and celebrated Franklin and Marshall College); he was one of the first Trustees of Dickinson College at Carlisle, a liberal benefactor, and a constant and earnest friend to it throughout his life. I have been amazed at the evidence furnished by his correspondence (Philadelphia Library collection) as to the extent of his labors for this institution—of which indeed it is clear that he was then regarded as the principal founder. Surely this is a noble record of wise and public-spirited activity.

that the weaker alcoholic beverages were comparatively harmless. He did not deny that the use of spirits may be indicated in the low states of certain acute diseases, but he pleaded eloquently for legislation against the abuse of ardent spirits, and he used his immense influence as a teacher and practitioner to discountenance their employment in disease save when absolutely necessary and then only with every precaution to guard against the formation of the alcohol habit.

Rush was evidently a perfectionist. His enthusiasm over the possibilities of human nature continually breaks out into expressions of sincere exuberance. I fear he drew his inspirations more from the experience of his own nature, refined and elevated, which required no excitement but the claims of duty, and no pleasure but the pursuit of knowledge and truth, than from the observation and study of men as they actually exist. Very naturally and properly he opposed the use of tobacco as a habit attended with many injurious results. "Were it possible," he begins his observations upon the influence of the habitual use of tobacco upon health, morals and prosperity, "for a being who had resided upon this globe to visit the inhabitants of a planet, where reason governed, and to tell them that a vile weed was in general use among the inhabitants of the one it had left, which afforded no nourishment; that this weed was cultivated with immense care; that it was an important article of commerce; that the want of it produced real misery; that its taste was extremely nauseous; that it was unfriendly to health and morals, and that its use was attended with considerable loss of time and property, the account would be thought incredible, and the author of it would probably be excluded from society for relating a story of so improbable a nature. In no one view is it possible to contemplate the creature man in a more absurd and ridiculous light than in his attachment to tobacco." And so he concludes the same observations by reference to one from whom frequent evidences show that he drew much of his inspiration of humanity. He tells us that Dr. Franklin, a few months before his death, declared to one of his friends that he had never used tobacco in any way in the course of his long life, and that he was disposed to believe there was not much advantage to be derived from it, as he had never met with a man who used it who advised him to follow his example.

I do not touch upon these various points merely as proof of versatility and activity. It is a common thing to see men who acquire a certain conspicuous but temporary fame, owing to the bustling energy with which they assume many positions and mix in many affairs; but it is found that they have won no lasting credit from any of their varied work. But for Rush it is fair to claim that in all the large affairs and questions with which he dealt he showed himself a pioneer and a leader, and that he did work of capital and enduring value. Very much of this depended upon his great gifts as a speaker and as a writer. He was in truth a man of letters of very high rank. Abundant testimony shows that his medical lectures were consummately excellent—clear, impressive, eloquent, and at times instinct with dramatic power. I shall allude again to the immense effect they produced in aiding the diffusion of his medical views. His more elaborate addresses and orations are admirable, and some of them, as those on Cullen and on Rittenhouse, and his address on "The Influence of Physical Causes on the Moral Faculties," are splendid performances. Richardson[3], to whom we owe the most appreciative of recent sketches of Rush, quotes from the eulogy on Cullen what he fitly calls a golden utterance; justly applicable to Cullen, it is a true expression of the spirit which moved Rush. "That physician has lived to little purpose who does not leave his profession in a more improved state than that in which he found it. Let us remember that our obligations to add something to the capital of medical knowledge are equally binding with our obligations to practice the virtues of integrity and humanity in our intercourse with our patients. Let no useful fact, therefore, however inconsiderable it may appear, be kept back from the public eye; for there are mites in science as well as in charity, and the remote consequences of both are often alike important and beneficial. Facts are the morality of medicine; they are the same in all countries and throughout all times."

However he may have acquired it, he was master of a style in writing, of rare clearness, force and flexibility. It lends a charm to every production of his pen. His letters to his family and intimates, the discussions of important public questions, his dissertations upon medical topics, are alike composed in this attractive style. Compact and well thought out arguments; vivid bursts of imagination and passages of glowing eloquence; bits of description of microscopic accuracy; apt illustrations, drawn from nature, history, literature, art, most of all from Holy Writ; sententious phrases; these are separate merits of the style, through all of which there breathes such candor and earnestness and humanity that the reader finds himself delighted with the man, as well as with the author.

If time permitted, it would be easy to show that in the vital matter of education he was as active, as progressive, and as far ahead of his contemporaries, as he was in social science. I dare not even allude to his advanced views on the education of women, or I should be drawn into an extended eulogy of his position upon this question, which now, more than a century later,

[3] The Asclepiad, 1885. B. W. Richardson, M.D.

is but beginning to receive the attention its immense practical importance demands. His labors for the establishment of the public school system; his suggestions of "A Mode of Education Proper in a Republic;" his "Observations Upon the Study of the Latin and Greek Languages as a Branch of Liberal Education, With Hints of a Plan of Liberal Instruction Without Them," and his "Defense of the Bible as a School Book," may be pointed out as evidences of what I have claimed for him.

What deep gratitude must we ever owe, for our national stability and prosperity, to the illustrious men, among whom Rush was notable, who recognized instinctively that universal education, thorough, sound and broad, was the only safety of the new Republic, and who continued the devoted efforts which had won from foreign oppression our liberties, in order to ensure us the means of maintaining them against no less deadly dangers at home.

In every portion of Rush's writings we find constant evidence of his genuine, unaffected piety. There is a vein of truth and sincerity in it which cannot be mistaken. Unquestionably he had his hard struggles with himself, with a nature excitable, sensitive and self-asserting. He stood in the slippery places of rapid success and early popularity. It was a time when men's blood was up. Opinions were held tenaciously and fought for willingly; but throughout his writings, public and private, the subject of religion is continually referred to, and invariably in the most reverential tone, without a tinge of polemics or of sectarianism. Indeed, he urged, in a remarkable "Address to the Ministers of the Gospel of Every Denomination," published as early as 1788, that each sect should appoint a representative in a general convention of Christians, whose business shall be to unite in promoting the general objects of Christianity. He concludes: "America has taught the nations of Europe, by her example, to be free, and it is to be hoped she will soon teach them to govern themselves. Let her advance one step further and teach mankind that it is possible for Christians of different denominations to love each other and to unite in the advancement of their common interests. By the gradual operation of such natural means the kingdoms of this world are probably to become the kingdoms of the prince of righteousness and peace." It is true that to the end of his life Rush continued to be active in the cause of philanthropy, of education, and of religion; but we shall see that after the year 1789 his great work was purely medical. The almost incredible fact appears, then, that in twenty years up to that date, when he was but 46 years of age, he had already accomplished so much in public life, both political and medical; in professional work, as a teacher, as a writer and as a practitioner; in statesmanship, in philanthropy, in education and in social science, as to secure lasting fame as a thinker of power and originality, and as a writer and orator of high rank. But a no less remarkable, and probably to us the most interesting, period of his life was to follow. Sydenham died in 1689, and just 100 years later, in 1789, Rush was elected to the chair of the Theory and Practice of Medicine in the College of Philadelphia, to fill the vacancy caused by the death of Dr. John Morgan.[4]

When we consider how important he rendered that position, and what lustre his subsequent work reflected upon the medical profession and upon medical science, it is not unreasonable that we should take note of this Centennial Anniversary of an event of the greatest significance in the history of American medicine.

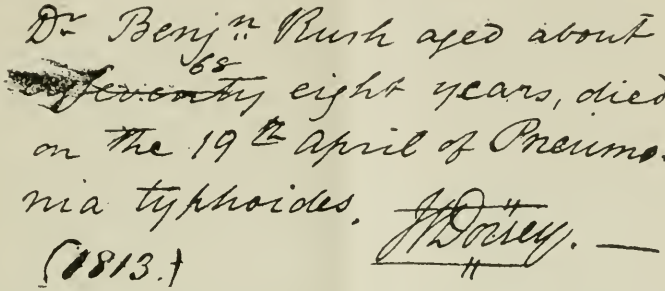
The air still vibrates with the national outburst of homage to the memory of the greatest of our heroes. The Centennial Anniversary of the Inauguration of Washington was fittingly made the occasion not only to illustrate our marvellous growth in power and prosperity, but to commemorate the character and services of that incomparable man. It may be that it was a thrill of sympathy with that fine retrospect, which made me feel that, in the discharge of the most difficult duty assigned to me to-day—of addressing this great audience representative of all branches of our profession in all sections of our land, it might not be amiss to select a topic which would remind us that for us members of the American medical profession this is an Anniversary year in an added sense.

The truth is that Rush was at all times and in all places and before all else a great physician. He had entered public life from a sense of patriotic duty; he had labored for the improvement of society because he was irresistibly impelled by his large humanity; but he threw himself into the service of medicine with passionate intensity. Ramsay, a favorite pupil and intimate friend, tells us that Rush wrote to him: "Medicine is my wife, science is my mistress, books are my companions, my study is my grave." As a matter of fact he married at the age of 32 years, and was so fortunate as to secure the hand of a woman whose character, charms and ability made their union a singularly happy one. At the close of his life, writing of the causes of insanity, he uses the following orthodox language: "Celibacy is a pleasant breakfast, a tolerable dinner, but a very bad supper. The supper is not only of a bad quality but, eaten alone, no wonder it sometimes becomes a predisposing cause of madness." Still we find him saying in 1808, in allusion to his

[4] In 1791, when the charter and estates were restored to the college, a reorganization was effected and the institution assumed the title of the University of Pennsylvania. Dr. Rush became the Professor of Institutes and of Clinical Medicine in the University. In 1797 he filled also the chair of Practice resigned by Dr. Kuhn in that year, though he appears not to have been formally elected to the latter position by the Trustees until 1805.

death: "When that time shall come, I shall relinquish many attractions to life, and among them a pleasure which to me has no equal in human pursuits. I mean that which I derived from studying, teaching and practicing medicine."[5]

Through the courtesy of Mr. Ferdinand J. Dreer I am enabled to reproduce here a facsimile of the certificate, given by Dr. Dorsey, as to the cause of Dr. Rush's death:



From 1789 to 1813 the history of Rush's work is largely the history of American medicine. We speak of the age of Sydenham, and date the origin of modern English medicine from it. So, if we limit ourselves to American medicine, may we speak of the age of Rush, and date from it our modern system of exact observation of symptoms, and strict attention to details of treatment both hygienic and medical. It is obvious that Rush was profoundly influenced by the genius of Sydenham in science, as he was by that of Franklin in philanthrophy. Sydenham was born in 1624; published his first important treatise in 1666, and died in 1689; and although Rush, when a student at Edinburgh under Cullen, was charmed with the teachings of that brilliant man, so soon as he began his independent observation he felt the trammels of artificial and cumbrous nosologies, and was attracted to the natural and scientific method of Sydenham, himself a true Baconian. Rush calls Sydenham his master in medicine, and loses no opportunity of proving by his writings his veneration for his genius and his example. When he came to choose a name for the country-seat which he so dearly loved as the only place where he found rest and tranquility, he called it Sydenham. Posterity, which Rush truly said is to the physician what the final judgment is to the Christian, has judged the pupil a worthy associate of the master, and has given Rush the title, which he would have regarded as the highest earth could bestow, of the American Sydenham. It is a sure sign of his essential greatness that the names chosen for comparison have been so illustrious. He was a Fothergill in the range of his scientific and human interests; he showed in his best work much of Sydenham's incomparable power of observation of the symptoms of disease and of appreciation of the indications for treatment. Rush enjoyed the immense advantage of living after Sydenham; but the latter had Hippocrates as master and exemplar. The special conditions under which great men do their work will always influence much its direction and its range. But the essential qualities of greatness; the rare note of genius; the power of infinite labor; the close touch with nature and with truth—such marks distinguish the work of men like these in whatever field and

[5] The following account of Dr. Rush's death, in 1813, is copied from the original letter of his widow to Dr. Mease:

Dear Sir:—Agreeably to your request I have committed to paper all that I think important in the progress of the disease of our dear and ever to be lamented friend. You can make any alteration in the order or words you think proper, and make such use of it as will answer the object you have in view. Yours with great regard,

JULIA RUSH.

Friday, December 8, 1815.

"At 9 o'clock on the evening of Wednesday, the 14th of April Dr. Rush (after having been as well as usual through the day) complained of chilliness and general indisposition, and said he would go to bed. While his room was preparing and a fire making he became so cold that he called for some brandy, which he immediately swallowed, then went to his room, soaked his feet and got into a warm bed and took some hot drink. A fever soon came on, attended with great pains in his limbs and in his side. He passed a restless night, but after daylight a perspiration came on, and all the pains were relieved except that in his side, which became more acute. He sent for a bleeder, who took 10 ozs. of blood from his arm; this gave him great relief. At 10 o'clock Dr. Dorsey saw him, heard what had been done and approved of it, observed that his pulse was calm but rather weak, and advised him to drink plentifully of wine whey, which was immediately given to him. He remained the rest of the day and on Friday with but little apparent disease, though never quite free from fever, and always complaining of the pain in his side when he tried to take a long breath. On the morning of Saturday he awoke with an acute pain in his side, and desired that the bleeder might be sent for. To this I objected, on account of the weak state of his pulse. I purposed to send for Dr. Dorsey, but Dr. Rush would not consent to the doctor's being disturbed, but was anxious to lose blood. He reminded me that he had a cough all winter and said, 'This disease is taking hold of my lungs, and I shall go off in a consumption.' I thought less risk would be run in waiting a few hours than in suffering him to be bled without the advice of his physician. At 8 o'clock Dr. Dorsey saw him, but upon feeling his pulse objected to his losing blood, and called in Dr. Physick, who agreed in the opinion that bleeding was improper, and it was not done. The pain in the side continuing and his breathing becoming more difficult, Dr. Physick consented to his losing 3 ozs. of blood from his side by cups. This operation relieved him so that he fell into a refreshing sleep, and towards the evening of Saturday his fever went off and he passed a comfortable night, and on Sunday morning seemed free from disease. When Dr. Physick saw him he told me he was doing well, that nothing appeared now necessary but to give him as much nourishment as he could take. He drank porter and water, and conversed with strength and sprightliness, believing that he was getting well, till about 4 in the afternoon, when his fever came on again, but in a moderate degree. At 5 his physicians saw him and found him not so well as in the morning, but not appearing to apprehend what so soon followed, for at that time nothing was ordered different from the morning. At 9 o'clock they saw him again, when they found him so low as to threaten the most fatal termination to his disease. Stimulants of the strongest kind were then administered; you, my friend, know with how little effect."

to whatever extent they have worked. Close comparison is impossible; it is enough to recognize that they belong to the small group of Nature's most gifted children.

We may judge of Rush's excellence as a teacher, and of the influence which he exerted on his age, by the testimony of his pupils. From all parts of America, students resorted to Philadelphia to profit by his instructions. In the mass of letters I have examined there are hundreds bearing testimony to this. Competent critics declare that for clearness and impressiveness his lectures were unrivaled. He so simplified the subject, presented such broad and clear generalizations, that Ramsay asserts a student could be better prepared for entering on his profession in three years, than he could on the former system in five. This was not because he taught on the famous plan of Sangrado, who said to Gil Blas: "I will immediately disclose to thee the whole extent of that salutary art which I have professed so many years. Other physicians make this consist in the knowledge of a thousand difficult sciences; but I intend to go a shorter way to work, and spare thee the trouble of studying pharmacy, anatomy, botany and physics; know, my friend, all that is required is to bleed the patients and to make them drink warm water." Far from it. He was, indeed, the earliest and strongest advocate for a high standard of medical education, as has been forcibly shown by one of our ablest scholars, himself a successor of Rush and a former President of this Association.[6] I know that malignant envy started and apathetic credulity has perpetuated the false opinion that Rush's method of cure was equally sanguinary. I know that, as will always happen to impressive teachers, there were students of Rush who carried away recollections of his vigorous treatment in certain cases, without an appreciation of the special indications present, nor of the reasoning which forbade similar measures in other cases apparently analogous, but to the trained judgment widely distinct. Of one of his students I was told by an old friend that she remembered vividly how on every visit of the doctor some blood was shed; and that, on one occasion, as he entered, her mother remarked that one of the children had a bad cold and added, "Of course I shall send for the bowl." Upon which the physician rejoined, justly incensed at this suggestion of mere routine on his part: "Not *of course*—you shall not send for the bowl *of course;* but ——— may fetch the bowl;" and bled the child was with unusual freedom.

I hold it to be absolutely impossible for us of to-day to pronounce adversely upon the merits of the treatment of Sydenham or even of the more modern Rush. In the first place, the entire subject is dominated by our more exact methods of diagnosis,[7] and by our larger knowledge of the natural history of diseases. It is evident that even those skilful observers were often misled, and treated local diseases as continued or malarial fevers, and attributed to their treatment changes which were essential to the course of the disease. But again, granting the largest share to this source of fallacy, it is to us impossible to doubt that they were right in regarding different epidemics as requiring different treatment. Sydenham[8] says: "This at least, on the strength of a multiplicity of accurate observations, I am convinced of, viz., that diseases of the character alluded to, and more especially continued fevers, differ from one another like north and south, and that the remedy which would cure a patient at the beginning of a year, will kill him perhaps at the close. Again; that when by good fortune, I have hit upon the true and proper line of practice that this or that fever require, I can (with the assistance of the Almighty), by taking my aim in the same direction, generally succeed in my results, respect being always had to the age and temperament of the patient, and to the other matters of the same sort. This lasts until the first form of epidemic becomes extinct, and until a fresh one sets in. Then I am again in a quandary, and am puzzled to think how I can give relief. And now, unless I use exceeding caution, and unless I exert the full energies of my mind, it is as much as (nay, it is more than) I can do to avoid risking the lives of one or two of the first who apply to me as patients; at length, however, I steadily investigate the disease, I comprehend its character, and I proceed straight ahead, and in full confidence towards its annihilation." Thus when he writes of the continued fever of 1661 to 1664, he says: "Whenever the state of the blood is of such description as I find it amongst youths of an athletic habit and a sanguine temperament, venesection is my leading remedy. Except in certain cases, it can not with safety be admitted. Neglect it, and you run the risk of frenzies, pleurisies and such like inflammations, which originate in the preternatural ebullition of the blood. More than this, —from the excess of the blood the circulation is impeded. You smother it. As to the quantity, it is my practice to take away just so much blood as I consider will relieve the patient of the distress, to which the violent commotion makes him liable." Yet in these same epidemics he states that when he has to do with a patient whose blood is in itself of a weak character, he keeps his fingers off the lancet. And when he discusses the pestilential fever of 1665-66 he asserts that he found an adequate substitute for venesection in profuse diaphoresis.

It appears that Rush actually bled more systematically than Sydenham. Ramsay says: "In a

[6] Alfred Stillé, M.D. Medical Education in the United States, 1846. Dr. Stillé held from 1864 to 1884 the chair formerly filled by Rush.

review of the improvements made by Dr. Rush, it appears that a free use of the lancet, in almost every case, and particularly in some in which it had rarely or never before been used, was one of his first and most common prescriptions." A careful study of Sydenham, to omit entirely such famous bleeders as Botallus, scarcely supports the former part of this statement, where frequent venesection is spoken of as an improvement introduced by Rush. Certain it is that in the later epidemics which Rush records he thought bleeding was less urgently indicated. Equally certain it is that in treating fevers he conjoins with venesection, the scientific external use of cold water, and a rigidly careful prescription of the diet. Finally, let it be remembered that the fame of Rush and of his methods of treatment in fevers, must, whether for good or for bad, be based chiefly upon his course in the great epidemic of 1793. Let any one who desires to fully appreciate this great man: nay—I would even say let any who desires to appreciate the highest elevation of emotion, of thought, and of action which can be maintained continuously throughout weeks and months—read and re-read Rush's account of this epidemic. It was published in 1796 when the events were fresh in the minds of all. It at once took the place which it has maintained as the best—or if not the very best, as one of the half-dozen best histories ever published of epidemic diseases. There is scarcely needed the extraordinary "narrative of his state of body and mind during the prevalence of the fever"—a narrative which Richardson describes as a ghostly whispering, through a veil of nine-tenths of a century—to reveal the man's inmost nature and thoughts during this terrible ordeal. He may have erred in his conclusions as to the effects of the evacuant treatment. The evidence in its favor is not his alone; some of the ablest of his colleagues endorsed his statements; his pupils, who were his assistants, said, "we cure all we are called to on the first day." Of course the exalted and exhausted state of mind shared by all the physicians who remained at their post, or whose lives were spared, was not favorable to the exercise of cool judgment; yet the record which Rush has given us is so replete with minute and accurate observations evidently made at the moment and at the bedside, that one finds it difficult to distrust his opinion as to the effect of bleeding and purging when used at the very earliest hour of the attack.

It is impossible to avoid a certain enthusiastic sympathy with Rush as we read his account of his labors and sufferings. For upwards of six weeks he did not taste animal food or fermented liquor; he abandoned all precautions, and rested himself on the bedside of his patient, and drank milk and ate fruit in their sick rooms; he visited over a hundred fever patients daily, and his house was filled with the poor whose blood, from want of a sufficient number of bowls, was often allowed to flow upon the ground; he lost his sister who had refused to leave him, and within an hour of her death he was in his chaise driving to visit his patients; he was ill himself, but recovered after repeated bleeding and purging; he was villified and slandered, but he fought his professional rivals with his pen as he did the fever with his lancet; and it was not until the epidemic was on the wane that he finally yielded to the disease and had a dangerous attack from which he recovered slowly, after plentiful bleedings.

In the plague of 1665, Sydenham acknowledges that he was persuaded by his friends to leave London, for, as he says, "*Tua res agitur paries quum proximus ardet.*" He returned earlier than his neighbor, however, and finding the disease still raging, he preferred experience to theory and bled freely and as he thought successfully. But Rush quaintly records: "It pleased God to enable me to reply to one of the letters that urged my retreat from the city," that "I had resolved to stick to my principles, my practice and my patients, to the last extremity."

Other physicians showed the same heroism, but he was the acknowledged leader, and it was their sincere conviction that a battle was being waged for a principle of vastly more importance than the fate of any one community. Rush began to treat the fever upon a stimulating plan; his failure led him to try diaphoretics, and later to use the cold bath as a febrifuge. Finding that no good followed; he was led to believe that the debility was apparent, and resulted from an oppression of the system, and he consequently began an evacuant plan of treatment, which he rapidly developed into a method for abstracting excess of stimulus from the system by means of *purges*, *blood-letting*, *cool air*, *cold drinks*, *low diet*, and *application of cold water to the body*. He asserts that the change of result was immediate; so that within a short time and during the height of the epidemic he could record in his note-book: "Thank God! out of one hundred patients, whom I have visited or prescribed for this day, I have lost none." Well might he add: "Never before did I experience such sublime joy as I now felt in contemplating the success of my remedies. It repaid me for all the toils and studies of my life. The conquest of this formidable disease was not the effect of accident, nor of the application of a single remedy; it was the triumph of a principle in medicine."

No conqueror could feel greater triumph when the crown of a vanquished empire was placed on his head; no explorer more delight at the sight of a new and long sought continent.

[7] See works of Sydenham, Sydenham Soc. Ed., i. p. 163, for an example of this.

[8] Medical Observation, Sydenham Soc. Ed., Vol. 1, chap. 9, p. 33.

"Then felt he like some watcher of the skies
When a new planet swims into his ken;
Or, like stout Cortez, when with eagle eyes
He stared at the Pacific, and all his men,
Gazed at each other with a wild surmise
Silent, upon a peak in Darien."

It is well for us who toil in paths which lead to little of worldly renown or glory to be reminded that to the faithful students of Nature and of Science there may come such moments of fruition and of sublime joy.

I repeat, then, that it seems to me difficult to believe that in certain fever epidemics, and when used with strict regard to the constitution of the patient, and when used in the forming stage of the disease, bleeding, as used by Sydenham and Rush, may not be at times beneficial. Occasion stays for no man. I am afraid that in our day of refined diagnosis it not rarely happens that the chance of effective interference in acute disease is lost while we examine the secretions and the record of temperature and search the blood. Sydenham wisely said: "I well know that the chance of a patient's death or recovery depends chiefly, if not wholly, upon the treatment of the first few days."

Once more, the statistical method, which has done such good service in checking perturbative treatment and in determining the natural history of diseases, was unknown in the days of Rush. It would have been impossible, with the faulty diagnosis of that time. For indeed we are learning, that many of the conclusions based upon it during the past fifty years are inconclusive in the light of the more exact differential diagnosis of to-day. We shall never again bleed for the name of a disease. Neither Sydenham nor Rush did that, though their less wise imitators did. But we shall learn to appreciate the dynamics of the system so accurately that, even when the disease is due to specific microbes or to poisonous ptomaines, we may possibly be able to relieve urgent symptoms and avert serious complications by timely moderate venesection. In all infectious disease, from scarlatina to tuberculosis, it is a question both of the soil and of the specific poison, and the symptoms and course of the disease are not simply the life-history of the microbe, but they are also the expression of the reaction of the system and of the secondary disturbances of function.

And lastly, let us remember the marvellous wealth of our resources as contrasted with theirs. We can produce startling therapeutic effects with precision and ease. Organic chemistry is daily giving us new agents of tremendous power. We are surely able to produce some of the results formerly attained by bleeding and by purging, by means less inconvenient and possibly less hazardous; but we may be assured that in this abundant wealth of remedies and in this facility of administration lie grave dangers. Let any one who would learn how a master of our art gained his skill in using his tools note carefully the utterances of Sydenham on the indications for opium in different diseases: "To know it only as a means of procuring sleep, or of allaying pain, or of checking diarrhœa, is to know it only by halves. Like a Delphic sword, it can be used for many purposes besides. Of cordials it is the best that has hitherto been discovered in nature. I had nearly said it was the only one." Sydenham and Rush had a few remedies which their long experience and minute observation taught them to use skilfully for the relief of many symptoms. We have many remedies for every symptom, and I fear that few of us devote enough scrupulous care and patient study to learn thoroughly the varied powers and applications of any of them. So this seems not only a good apology for the former use of bleeding, but a needed warning to us as to the careful and skilful use of our new weapons against disease, and a forcible suggestion that we may have erred in so completely abandoning remedies which had been so long and carefully tested, and so highly approved.

We have seen that Rush believed in principles in medicine. He did more—he gloried in these principles, and he wished his only epitaph to be that he had taught them. And in no way are the independent character and the intellectual vigor and originality of the man more strikingly shown than in his attempts to reduce the infinitely complex phenomena of disease within the compass of a simple but comprehensive system. "Rush," says the distinguished English physician, Lettsom, with whom originated the title of the American Sydenham, "approached, if not exceeded, Sydenham in grandeur and compass of thought, though less discriminating in that felicitous arrangement of medical phenomena which distinguished Sydenham, whilst his theories were less consonant with nature. To Sydenham the motto *Conamen naturæ* is most applicable; to Rush, *Nullius in verba*." I make this quotation with no notion of attempting the difficult and unwise task of a judicial comparison of these two great physicians, but because such expressions may help us to form a clearer estimate of the special merits of each. Full of interest also, from this point of view, is the appreciative and critical summary of Sydenham's great life work by his most distinguished editor and biographer, Latham; "for he had recognized, what is now an old truth, what was then a new one, and what is always a great one, the entire supremacy of direct observation. He was one of the earliest to see and apply the true induction of medicine, while in the powers of observation, of analysis and of comparison he was subtle among the subtle, and accurate among the accurate. For practice these were all that Sydenham required; for the development of a system he wanted also the reduction of his

observations, both on disease and treatment, to laws more or less general. The intellectual powers here requisite were less, undoubtedly, the peculiar powers of Sydenham's mind, than the powers of observation, analysis and comparison."

It goes without saying that any theories constructed in those days, or in the time of Rush, could have been provisional only, owing to the want of instruments of precision to register exact observations, and the want of accurate differential diagnosis. It will suffice, however, that we read carefully the volume of Rush's medical inquiries to be convinced that we are in the presence of a scientific spirit of rare scope and power. It is easy to pick out instances of theorizing pushed beyond legitimate bounds, and of practice based on such theories carried beyond the limits of safety, as we now can define them. All are familiar with the oft-quoted advocacy of bleeding in pulmonary consumption; but all have not taken pains to study the original, where they could see that Rush's views on the treatment of this disease were far in advance of those of his contemporaries, and, indeed, were in harmony with much of the best thought of the present day. So far from advocating depletion and confinement to stove-heated rooms, he says himself:[9] "Bloodletting has often relieved consumption, but it has been only by removing the troublesome symptoms of inflammatory diathesis, and thereby enabling the patient to use exercise or labor with advantage." Again (id. loc.): "We shall not be surprised to hear of physicians, instead of prescribing any one or all of the medicines formerly enumerated for consumption, ordering their patients to exchange the amusements or indolence of a city for the toils of a country life; or of their recommending not so much the exercise of a passive sea voyage, as the active labors and dangers of a common sailor. I shall only add that if there does exist in nature such a medicine (as to supply in any degree the place of the labors or exercises), I am disposed to believe it will be found in the class of tonics."

More than enough has been said, I am confident, to vindicate the lofty claims made for Rush as the high-spirited patriot, the wise and far-seeing reformer and philanthropist, the eloquent teacher and writer, and, above all, as the founder of scientific medicine in America, keen and indefatigable in investigation, brilliant and vigorous in generalization, faithful and sagacious in the application of his principles in practice. This imperishable fame is fairly his; his splendid example he has bequeathed to us. Is it not our duty, shall it not be our pride, to rear in enduring form a fitting memorial of our gratitude?

[9] Medical Inquiries and Observations, 2d ed., 1796, Vol. i, p. 199.

ORIGINAL ARTICLES.

INCOMPLETE INWARD DISLOCATION OF THE RADIUS AND ULNA AT THE ELBOW.

Read by Title in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Some writers who have devoted especial attention to the subject of lateral dislocations of the forearm have had an unusually large experience. But there are many able surgeons whose experience appears to be quite limited in this respect. Pitha, for instance, whom Bardeleben quotes as a surgeon of large experience, met with only two cases of inward dislocation. The literature of this country and Great Britian appears to be particularly deficient in any special reports on this form of dislocation. Aside from the descriptions in the text books of the inward dislocation, which in most cases are very meagre, very few reports of cases could be found. The scarcity of reported cases of this kind in American literature may be due to the fact that but few cases have been observed in this country, or the true nature of the dislocation was not recognized, or there may be some who have failed to reduce the dislocation, and therefore refrained from reporting their cases; and on the other hand, some, who may have reduced the dislocation without much difficulty, may not have regarded their cases of sufficient importance for publication. Under these circumstances it appears desirable that cases, whether reduced or not, should be reported and the literature reviewed.

When the upper end of the ulna has been pushed to the inward side of the lower end of the humerus, so that its greater sigmoid cavity embraces the epitrochlea, and the head of the radius following the ulna is under the trochlea, we have the incomplete inward dislocation of the forearm, or of the radius and ulna at the elbow. Both the radius and the ulna are dislocated completely when considered singly. The greater sigmoid cavity of the ulna has been completely separated from its former opposite articulating surface, the trochlea; as has also the head of the radius been entirely separated from its opposite articulating surface, the capitellum of the humerus. But viewing the upper and lower articulating surface of the elbow joint, each in its entirety, the dislocation is incomplete, because the outer portion of the surface, the radius, remains in contact with the inner portion of the articulating surface of the lower end of the humerus. Another reason for applying the term incomplete to this form of dislocation, is to distinguish it from that form where the bones of the forearm are displaced so far inwards, that the radius looses all connection

with the articulating surface of the lower end of the humerus. It should be stated, however, that this complete inward dislocation is merely theoretical, as no case can be found recorded.

Descriptions of subdivisions of this dislocation have been attempted, but none have been sufficiently characteristic to be generally accepted. Denucé speaks of a possible dislocation in which the sigmoid cavity of the ulna embraces the inner border of the trochlea, but says this form is hardly possible. The inner border of the trochlea has a relatively much larger circumference than the middle portion, and it would probable require very little force to reduce the dislocated ulna, or to push it inwards to such a degree that the sigmoid cavity entirely leaves the trochlea. Moreover, this is all the more probable when it is remembered that there is a ridge in the centre of the sigmoid cavity running parallel to the long axis of the ulna, from which the surface declines to each side, or, in other words, the sigmoid cavity presents a convex surface in the transverse lines. This convex surface would not likely remain on the sharp inner edge of the trochlea unless some unusal impediment prevented it from slipping to one or the other side. There is one case described by Sprengel, in which this position of the bones was demonstrated by resection of the anchylosed elbow joint seven months after receiving the injury. In this case only a part of the inner portion of the greater sigmoid cavity projected beyond the inner edge of the trochlea. But on the free surface of the sigmoid cavity a small piece of bone was found attached by fibrous tissue, which proved to be the severed point of the epitrochlea. In some cases the head of the radius is forward or posterior to the ulna, and subdivisions of radio-posterior and radio-anterior variety have been suggested. This displacement is not usually very marked. In some reports of cases it is stated that the head of the radius could best be felt at the anterior, others at the posterior surface of the joint; but most of the reports contain no note of this.

Case.—N. S., æt. 3½ years, on April 8, 1885, fell on the floor while running with a doll in her hand—she fell on the forearm and hand while holding the doll.

When I examined the child I found considerable swelling at the elbow joint. The arm was held in a slightly flexed position, the hand pronated moderately. Flexion and extension, though somewhat painful, could be made without much difficulty; supination and pronation the same. No shortening of the arm could be detected. There was no crepitation. The swelling interfered considerably in making a careful examination, but no displacement of the bones could be detected. The absence of crepitation, the freedom of motion, and the absence of any very marked deformity led me to think that there was not much more than a laceration of the deep soft structures of the joint or its surroundings, but a positive diagnosis was reserved for a later time when the swelling had subsided.

Several days after receiving the injury, when the swelling had disappeared, a careful examination was again made, and now it was evident that the radius and ulna were displaced to the inward (ulnar) side. The external condyle was very prominent. The head of the radius could not be felt at its usual place under the capitellum. The olecranon could not be felt in its fossa, but was found behind and above the epitrochlea. The head of the radius could now be felt with some difficulty under the trochlea. Passive motion was still somewhat painful but good. An anæsthetic was given and reduction attempted, but failed after repeated efforts. This was followed by swelling and tenderness of the joint.

Four or five days later, after the swelling was again reduced, another attempt was made to reduce the luxation while the patient was completely under the influence of an anæsthetic. This time I was assisted by Drs. Hoge, Wilson and Bates, Jr. Various methods were tried. Extension and counter extension with lateral pressure on the displaced bones while the forearm was in different stages of flexion, and in complete extension was tried, but failed. Forced lateral inward flexion, so as to hook the olecranon in its fossa, followed by hyper-extension and outward flexion to lift the coronoid process over the inner edge of the trochlea was also tried. The joint was very lax, and it appeared as if reduction could certainly be accomplished. But the persistent efforts by myself and the gentleman present, and according to various methods suggested, having failed, the attempts to reduce the dislocation were abandoned. The violence done to the joint at this attempted reduction was followed by very much swelling and discoloration of the elbow and entire forearm. This gradually disappeared and instructions were given to continue passive motion.

March, 1889. Four years after receiving the injury the dislocated elbow was again examined. The displacement of the bones is the same as described above. There is no shortening of the arm. The diameter of the joint is about the same as that of the uninjured arm. When the arm is held in an extended position, the hand being supinated, the lower end of the axis of the forearm is deflected inwards, so much so that the axis of the arm forms an angle with the axis of the forearm, the concavity of which is on the inner side of the arm, instead of the outer side as on the uninjured side. Active flexion, extension, supination and pronation is about as perfect as with the left arm.

Cause.—Some few cases of this form of injury are reported where the patient fell on the elbow,

but in most cases it is stated that the patient fell on the outstretched hand. A second factor, however, seems to be necessary to displace the articulating surfaces of the elbow joint. It is generally accepted by those who have written on the subject, that this second factor is a forced rotation inwards of the forearm. Forced lateral flexion, to the external side, sufficient to rupture the internal lateral ligament followed by a slight torsion of the forearm, may also cause this dislocation. Hamilton reports a case observed by Squier resulting from a fall from a pile of boards, the right arm was caught between the boards, and the child turned a somersault while falling. Pitha reports a case of a boy who fell on his back with the forearm under the same. Denucé reports a case of a lady who was thrown from a carriage, she fell on her hand, the arm being extended. The carriage wheel passed over it obliquely from without inwards, and from behind forwards upon the outside of the elbow immediately below the articulation. In the case of Reid, a gamekeeper while wrestling, "was thrown upon his left elbow whilst it was in a semi-bent position." Prewitt reports the case of a girl, æt. 5, who, while "swinging upon a trapeze, holding the crossbars with her hands, was pushed by a boy so as to swing up several feet when she lost her hold, and fell upon her right elbow." The last two are the only cases I could find in the literature, where from the description there can hardly be any doubt that the injury was received by a fall upon the elbow.

Pathology.—Pitha and Denucé have shown that the incomplete inward dislocation of the forearm can be produced without much difficulty on the cadaver. The experiments of both show that rupture of the lateral ligaments, particularly the internal ligament, is necessary to bring about the dislocation. Rupture of the capsule alone in its anterior or posterior portion, will not permit the lateral dislocation if the internal lateral ligament is not severed. The inner ligament can be ruptured by making forced external lateral flexion, then slight hyper-extension with lateral pressure at the joint, or better still, forced pronation will carry the coronoid process and olecranon over the inner border of the trochlea. After dissection of the dislocated joint as produced upon the cadaver, Denucé usually found both lateral ligaments ruptured, the anterior and posterior ligaments lacerated, the annular ligament was ruptured sometimes. The ulnar nerve was found contused in some experiments.

Broca has described the results of a dissection of what was evidently an old case of incomplete inward dislocation. He says: "No traces of the lateral or of the annular ligaments were found. A sort of fibrous capsule of recent formation, adherent to the deep surfaces of the muscles, united the inferior extremity of the humerus to the head of the radius, and the latter to the superior extremity of the ulna." Jolivet reports having found three pathological ligaments in a dissected specimen: "1. A ligament extending from the articular depression on the head of the radius to the posterior inferior part of external articular half of the trochlea. 2. A ligament from the articular cavity of the coronoid process to the epitrochlea. 3. A ligament extending from the posterior and internal border of the epicondyle to the superior part of the external border of the olecranon. The latter was more considerable than the others and triangular in form."

Frequency.—Of twenty-seven cases of incomplete inward dislocation at the elbow found in the literature of the subject, where the side of the injury is mentioned, fourteen were on the left side and thirteen on the right side. Of thirty-one cases where the sex is given, twenty-one were males and ten were females.

Hahn was probably the first to show that this dislocation occurs most frequently during childhood. He had an unusually large experience having met with twenty-one cases, of which eighteen were below 15 years old and only three above that age. Of thirty-one cases reported, including those of Hahn, twenty-three were from 2 to 15 years old, and eight were adults. If to this number I add my own case, it will appear that nearly 78 per cent. occurred during childhood.

Comparing the incomplete inward dislocation with other dislocations at the elbow, the following data were obtained. Hahn met with twenty-seven backward dislocations to twenty-one incomplete inward dislocations, showing that in his experience the latter dislocation is almost as frequent as the former. Of his twenty-seven backward dislocations fourteen were adults and thirteen children. Sprengel found thirty-two cases of lateral (including outward as well as inward) dislocations of the elbow on record in the surgical clinic at Halle (Volkmann) during the years 1873 to 1879. Of this number twenty were inward dislocations and twelve outward. Of the thirty-two cases twenty-eight occurred in children and four in adults.

Symptoms.—The forearm is usually slightly flexed on the arm, and the hand is in a position of slight pronation to extreme pronation. I failed to find any case reported where the hand was supinated as reported in some text-books. The one case of Pitha and two of Denucé are reported to have been in extreme pronation. There is no marked shortening of the arm. A slight shortening may be found along the inner (ulnar) side of the arm, the epitrochlea with which the ulna now articulates being placed somewhat higher than the trochlea. This relative position of the epitrochlea and the trochlea

also causes a deflection of the lower end of the forearm inwards. The transverse diameter of the joint may be increased by a few lines but not more, as the inner edge of the sigmoid cavity does not project much, if any, beyond the point of the epitrochlea. Passive motion is usually resisted by the patient in consequence of the pain, but when put under the influence of an anæsthetic it is as free as in the uninjured joint. The external condyle is very prominent. The head of the radius cannot be felt in its place under the capitellum of the humerus. The olecranon fossa is found empty, and below it the head of the radius may be found articulating with the trochlea. The head of the radius can sometimes be felt anteriorly instead of on the posterior side of the joint. The olecranon is felt behind and above the epitrochlea, and the coronoid process in front of the same bony prominence. The tendon of the triceps muscle following the olecranon deviates to the ulnar side of the arm.

Diagnosis.—There is no difficulty in making the diagnosis of old cases of incomplete inward dislocation of the forearm, and this accounts for the fact that many writers who have seen only old cases, report that the diagnosis can be readily made. In recent cases and especially in children, I believe the diagnosis is by no means easy. Hahn, with his large experience, says, that the first five cases occurring in his practice were not recognized until after some time. Of the twenty cases mentioned by Sprengel, eleven cases were old dislocations when brought to Volkmann's clinic. This must be due to one of two causes: either the true nature of the injury was not discovered, or, if a proper diagnosis was made, reduction could not be accomplished. Nine of Hahn's cases were old dislocations when first seen by him. Pitha expresses the view that this dislocation is frequently overlooked. Sprengel says, in most cases of this injury the proper diagnosis is not made. In the case reported by Prewitt, the nature of the injury could not be determined while the limb was swollen, and after this swelling subsided, it was supposed that a fracture had occurred about the elbow joint. Five weeks after the accident Prewitt examined the child and made a correct diagnosis.

In children, where the bony prominences are not very marked, where the adipose tissue is usually well developed and the soft tissues permit rapid swelling, the dislocation is easily overlooked. The comparative freedom of motion with no marked shortening of the arm or other gross deformity is liable to mislead the observer. The absence of the head of the radius from its position under the capitellum of the humerus may not be noticed, as this part of the radius cannot be felt very readily when the elbow of a child is swollen. The swelling may also prevent the detection of the absence of the olecranon from its fossa, and the displaced olecranon may be mistaken for the epitrochlea.

The deviation of the lower end of the axis of the forearm inwards, so that this axis is a continuation of that of the humerus, or even diverges so far inwards, that it forms an angle with the axis of the humerus opposite to that of the normal arm, is, I think, an important diagnostic sign, when the diagnosis of fracture has been eliminated. This deviation is best seen when both arms are extended forward and the hands are supinated. The relation of the olecranon to the epitrochlea and epicondyle should also be examined very carefully. To avoid mistaking the displaced olecranon for the epitrochlea, place the finger upon the posterior surface of the ulna, at such a part where there is no swelling, and follow this surface carefully upwards until the olecranon is reached, then make flexion and extension of the forearm to see if it moves with the forearm. After being certain that the finger is on the olecranon, ascertain its relation to the epitrochlea and epicondyle, and make comparisons of this relation at the uninjured limb.

This dislocation has been diagnosed a number of times as fracture. The soft cartilagenous crepitation, which is observed sometimes in recent cases, has probably led to this error. This mistake should be carefully guarded against, as the application of a splint may cause anchylosis of the joint, when otherwise, motion would probably be fairly good and the limb quite serviceable.

Prognosis.—While it is highly probable that this luxation has been frequently mistaken for other forms of injury, yet in view of the large number of old dislocations it is fair to assume, that some of the dislocations were properly recognized, but that reduction could not be accomplished. There may be some self-satisfaction to a writer of a book on surgery to announce *ex cathedra* that "reduction is easy," but it is not instructive to the practitioner who perchance is unfortunate enough to meet with such a case. Such statements tend to prevent the physician, who has failed to reduce the dislocation from publishing his case. Pitha in his report of a case, a child 7 years old, says he was surprised at the difficulty he met with in making reduction. Denucé reports a case of Debruyn in which reduction was not accomplished without difficulty. The same author reports a case observed by Triquiet where a number of attempts were required to reduce the dislocation. Hamilton says that Malgaigne was unable to reduce the dislocation in a recent case. Wright has reported a rare case of dislocation where the ulna alone was displaced inwards, the radius remaining in its normal position. After repeated attempts he was unable to reduce the dislocation, he says:

"the fact that we were unable to reduce the dislocation after such prolonged trial was to me a matter of great surprise as well as disappointment, because the joint was exceedingly lax, and the olecranon was freely movable." Prewitt could not accomplish reduction in his case five weeks after the accident. In old cases of this dislocation reduction is rarely successfully made. Sprengel reports one reduction in a case of eight weeks standing. This is the only one of the eleven old dislocations observed in Volkmann's clinic.

After the luxation has been reduced, motion, after a short time, will usually be good. Pitha found it necessary to break up some adhesions which occurred after reduction; but this case was complicated by a fracture of the epitrochlea. Of one case reported by Denucé it is said: "power of motion never returned." When the dislocation has not been reduced there will in time be fairly good motion, and a very serviceable limb will be had, especially if passive motion is persistently practiced.

Treatment.—The method most commonly adopted to reduce an incomplete inward dislocation at the elbow, is to make traction on the forearm, the arm being counter-extended; at the same time lateral pressure is made at the joint in such a manner that the lower end of the humerus is pushed inwards, while the upper ends of the radius and ulna are pushed outwards. This method proved successful in the case of Pitha, also in the case of Triquiet reported by Denucé, and also in the cases reduced by Hahn. While traction is made the forearm should, according to Hahn, be in the position of strong extension, and according to Triquiet in extension and supination. The method described by Sprengel and which has been successful at Volkmann's clinic, is not very lucid in expression. He says: "The arm is bent (kinked) laterally in such a manner that the existing dislocation is increased, then a movement is made in the opposite direction while direct pressure is made." Stimson says, that "theoretically, outward lateral flexion combined with moderate traction and followed by direct pressure ought to effect reduction readily."

The difficulty is that the inner edge of the trochlea describes a circle with a larger radius than the circle described by the middle and smaller portion of the sigmoid cavity, furthermore, the sigmoid cavity describes more than a half-circle, thus leaving a comparatively small open space for the entrance of the trochlea. From measurements on an adult skeleton I find that in sliding the bones into their normal position there will be a distance of three-eighths of an inch between the middle portion of the sigmoid cavity and the opposing surface of the inner edge of the trochlea. This indicates that sufficient traction must be made to draw the ulna three-eighths of an inch farther from the humerus than when it is in its natural position. This space cannot be avoided except by such extreme lateral flexion as is impracticable, because of the danger of injuring other tissues around the joint.

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CLINICAL NOTES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. D. ARNOLD, A.M., M.D.,
SURGEON TO THE SAN FRANCISCO POLICLINIC.

Early in May I was in receipt of a letter from Dr. Fletcher Ingals, which contained a request that I prepare a paper for this meeting of the American Medical Association. Sensible of the honor conferred in the request, I replied that my time was so taken up that I was unable to engage for anything that might require elaborate preparation, but would be glad to read the notes of a few interesting cases, if in his opinion they would answer for such an occasion. This is at once my reason and excuse for offering the following paper which is an unelaborated description taken from my case book, with only so much comment as is needful to elucidate the narrative.

Case 1. Adeno-Carcinoma of the Larynx.—Patient a man, æt. 38, occupation car-driver. About seven months ago took severe cold after unusual exposure on a rainy night. Quit work for five days, at the end of which time he felt quite well, but the voice remained somewhat hoarse. Used many patent medicines, and finally consulted a physician. Patient denied all history of syphilis, but after a series of in-

halations was put upon mercurial inunction and pot. iodide. During all this time the hoarseness increased, and dyspnœa and dysphagia made their appearance. There had never been any pain in the throat, and very little cough. On October 3, 1888, I saw patient for the first time. He speaks in a toneless whisper; breathing loud and labored. Examination with the mirror disclosed the cavum of the larynx, almost filled with what appeared to be a mass of papillomata. Nothing could be seen of the structures of the larynx except the superior margin of the epiglottis. The growth projected into the pharynx and rested against its posterior wall: (it was of a grayish color and was distinctly fibrillated.) I could not detect the chink through which respiration was carried on. The man's dyspnœa made him urgent for immediate relief. Accordingly after free use of cocaine spray (10 per cent.) I removed with the Mackenzie antero-posterior forceps a piece of the growth about as large as a medium sized almond. I had to use considerable force to tear it away, and the procedure brought on an attack of suffocative cough which lasted so long that I feared an instant tracheotomy would be necessary. He came around all right, however, and expressed himself as highly gratified at the greatly increased freedom of respiration; voice remained as before. Inspection showed that the removal of the portion of the tumor had exposed to view the right artyenoid. That same day I sent the growth to Dr. Douglass Montgomery for microscopical examination. He reported that it was a simple papilloma. On October 6, 9, 14, and 27, I removed other portions of the tumor aggregating in all 146 grains in weight; and all agreeing in naked eye appearance with the piece first examined. Breathing had now become easy and noiseless, and the voice was markedly improved. On November 6, I removed a large mass which was much more dense than the former pieces; which lacked the fibrillated structure, and which was followed by considerable bleeding. This was also sent to Dr. Montgomery who reported that it was clearly an adeno-carcinoma. After this I refrained from any further endo-laryngeal operation, and advised the patient of the fact that his disease was malignant. He could not understand why the operations which had helped him so much should be discontinued and refused the tracheotomy that I proposed. Three weeks later he returned with a relative to talk the matter over. I explained that the whole larynx was involved in the growth, and set before them the operations of tracheotomy and excision, and read to them Solis-Cohen's statistics bearing on the matter. As my own choice I urged a simple tracheotomy. They came to no decision and left with the intention of seeking other council. On December 19, I was informed that the man had died from apnœa, refusing tracheotomy to the last.

Case 2. Epithelioma of the Larynx.—A man about 62 years; day laborer. Policlinic patient. Voice became affected more than a year ago. At times grew better then worse. Now complete aphonia. Breathing grew labored about four months ago; had to quit work. Breathing only slightly audible when at rest; becomes stridulous upon slight exertion. Deglutition has been painful for some weeks. Patient first seen March 25. Laryngoscope showed the following: there presented in the lumen of the trachea a nodulated tumor, which appeared about as large as an olive; it was covered with thick grayish secretion, and springs from the infra-glottic portion of the left vocal cord. The cord itself was of a deep red color, but its surface and vibrating edge was intact. The whole left half of the larynx was perfectly immovable, and seemed lifted above its normal plane, for upon phonation the right cord was pressed against the tumor some lines below the free margin of its fellow. With the exception of some slight congestion of the mucous membrane the right side of the larynx appeared normal. Careful examination of the neck discovered no enlarged glands. From the nodulated appearance of the growth, the complete fixation of the left side of the larynx and the constant dysphagia, a diagnosis of cancer was made. On the next day I removed with Schroetter's pincette two small pieces of the tumor which were examined by Dr. Douglass Montgomery, who reported that "both pieces were found to be papillomatous with an epitheliomatous base. In one piece there was evidently an attempt at 'nest formation.'" Thyrotomy was proposed and refused at first, but by April 28, the dyspnœa and dysphagia had become so unbearable that the man presented himself with the request that the operation be performed at once. On April 29, 9:30 A.M., patient was chloroformed and a tracheotomy done. The neck was very short, trachea almost entirely within thorax, lower border of the cricoid cartilage being on a level with the sternal notch —consequently the high operation had to be made. Considerable difficulty was experienced because of an enormous developement of the middle lobe of the thyroid gland. The isthmus had to be divided between ligatures and the first two rings of the trachea cut with bone scissors; they were completely ossified. A tampon-cannla which had been made for the case, broke whilst being introduced, and it was replaced by an ordinary silver tube. When the thyro-cricoid ligament was exposed it was found perforated by the growth which was exceedingly dense and granular to the touch. The thyroid cartilage was split in the median line with bone forceps, and the wings separated with strong hooks; that portion of the larynx between the lower edge of the cricoid and the trachea was firmly tamponed

with aseptic cotton, and the growth which was much larger than it had appeared in the mirror, cut away with curved scissors. The basis of the tumor was thoroughly curetted with a sharp spoon; touched with Paquelin cautery, and the site of the wound packed with antiseptic cotton. No ligature was put into the cartilage; it was allowed to close by its own resilliancy. The whole operation including the tracheotomy occupied about an hour. Patient rallied promptly. Seven hours after the operation, temp. 100, resp. 34. Next morning a longer tube was introduced, the tampon removed, the wings of the thyroid drawn asunder, and the whole larynx carefully examined. The wound was perfectly dry, and it was discovered that the glands under the os hyoides were infiltrated, and that the thyroid cartilage itself was at several points perforated by the growth. It was then decided to do a partial resection on the next day, if the patient's condition warranted it. Next morning temp. 102.5, resp. 40. Patient took a large quantity of bouillon and egg-nogg during the day. Deglutition was quite as good as before the operation. During the night of May 1, the tracheal tube became displaced, and before the attendant could reintroduce it, great emphysema of the neck and thorax developed. Symptoms of putrid pneumonia made their appearance on this day. Patient died May 5, 11 A.M.

Case 3. Bilateral Paralysis of the Abductors and Adductors of the Vocal Cords.—Man, æt. 53, applied at Policlinic May 15; has had cough with abundant expectoration for more than a year; was told in December last by his physician that he was consumptive and advised to go to sea. Made a sea voyage to Australia and returned to San Francisco in March with less cough, but had been losing weight all the time. Hoarseness and stridor first noticed whilst on ship board. Patient a small thin man, with remarkable emaciation of face; has decided cadaveric expression of countenance. Respiration very loud; voice a hoarse whisper, broken at every third or fourth word by a deep gasp for breath. The laryngoscope revealed the vocal cords fixed near the median line of the glottis. The fixation was absolute and neither phonation nor forced respiration altered in the slightest perceptible degree the shape of the glottis. The structures of the larynx appeared normal in color and contour. There are small cavities in both lungs; sputum rich in bacilli. The most careful examination failed to detect any source of nerve pressure upon either side of the neck, or in the mediastinum. Patient has been advised of his danger and told that tracheotomy may become necessary at any moment.

4. Unilateral Paralysis of Larynx.—Man, æt. 43, appeared at Policlinic April 23, states that whilst at dinner three days ago he was seized with a fit of coughing, during which a piece of meat he had in his mouth was drawn down into his throat. The meat stuck there and for a few moments resisted all efforts to dislodge it, when, fearing that he was about to suffocate, he seized a table knife, and, using the handle as a probang, managed to push the obstacle further down his throat. Breathing at once became easy, but the voice was hoarse, and he found it difficult to swallow even a mouthful of water. Inspection of the larynx showed the left cord fixed in the cadaveric position; otherwise nothing abnormal. The man was given a glass of water and told to swallow it; after several ineffectual attempts he managed to get a portion down, but immediately after it was regurgitated through the mouth and nose. The œsophageal sound was now introduced, which discovered an obstruction just below the level of the cricoid cartilage, and an attempt to force the obstacle brought on a violent fit of coughing during which the lump of meat was expelled. It measured nearly one and one-quarter inches in its largest diameter, and was covered with thick yellow mucus. From this moment the paralysis commenced to disappear, and five days afterwards the action of the cord was almost normal. The man, however, still complains of a decided feeling of constriction at the former site of the obstruction.

TRISMUS NASCENTIUM.

Read by Title in the Section of the Diseases of Children, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY U. V. WILLIAMS, A.M., M.D.,
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In exploring this field we must realize that we are more in the region of conjecture than fact, more in the domain of fancy than reality. The exciting cause must of necessity be obscure in a condition that obtains in the newborn during a period of from four to six hours to as many days, and appears without warning. Life in its beginning, like its end, is very feeble, and the slightest disturbing influence may endanger the one, or hasten the other.

The various causes laid down by the authorities on tetanus in the newly born are unsatisfactory, and every one is subject to negation; most notably they are injury to the cord and pressure upon the medulla oblongata. Is it traumatic? The wound of the umbilical cord does not seem to be sufficient; probably not in one case in ten thousand births is it found to exist. All have the cord ligated, then circulation ceases, if not before; no nerves have ever been traced into, or from the cord.

In the lower animals the cord is ruthlessly torn asunder. If the disease were caused from such traumatism, its frequency would be observable in

them, more than in the infant which has been treated with greater care; still in them it does not exist at all. In the birth act, the same, or like pressure is made upon every medulla, varied only by the relative diameters of the pelvis and head and the force exercised to push or, in case of forceps deliveries, to pull the head through the bony strait, and whether the delivery is tedious or quick, natural or artificial, the disease is just the same, exceptional, and when it does occur alike inexplicable.

I have notes of thirteen cases occurring in my own and my friends' practice. In each no assignable cause is maintainable. Two cases were forceps deliveries. Four of the remaining eleven were tedious, the others natural, and all at full time. In six cases one or both parents were consumptive. In four one or both parents were addicted to alcoholic excesses, and in three there was suspicion of syphilis. Now my critic might say how many hundreds of cases were alike predisposed, and no case of trismus occurred. I say also, hundreds of cords are tied and medullæ pressed and no case occurs. True, but does not the coincidence of all having a predisposition affect the possibility that the cause may be found in a defective organization intensified by the birth act, and called into prominent existence when the creature was beginning to have a separate life, in no wise dependent upon the maternal influences. Inherited resemblances do certainly exist, mental characteristics may certainly be transmitted; equally so do the tendencies to health or disease obtain by transmission from parent to child. This we accept because the fact is patent, and every day observable, but how it is done we know not, except from that axiomatic Divine fiat "that every creature and plant shall bring forth after his seed, and of like kind." We do not know why an oak does not come of a chestnut, we only know it is impossible that it should. Equally so a perfectly developed child cannot spring from a diseased parentage, and this tendency we call predisposition. In the newborn, oxygenation of the blood is very imperfect. At the beginning the lungs act but feebly, not at all before birth. The pressure of the powerfully contracting uterus does to a considerable extent impair the maternal supply of oxygen transmitted from the placenta through the cord—obtunding the nervous influence of the child *in utero*. Such a condition is possible; if accepted, its probability is beyond dispute; thus impure blood charged with carbonic products will act upon the brain of the infant, as the adult, and cause like results—trismus and convulsions. Again, the kidneys may be the cause. Interstitial nephritis may exist, and does doubtless at birth, the blood may be charged with uric products during the first hours or days of life and poisoning ensue, causing the disease to early manifest itself. In the adult state, such does occur, especially is puerperal eclampsia attributed to such condition in part. It is asserted by physicians who practiced in the South *ante bellum* that a very commonly attributed cause of trismus among the negroes, among whose young the disease was very much more frequent than among the whites, was the inhalation of green wood smoke and the pyroligneous acid and other products of combustion. In every cabin there was a rude fireplace in which green wood was used for fuel. Ventilation was poor and the rooms were overcrowded; furthermore, the disease was oftener seen in winter than in summer. The acid products of the smoke inhaled were transmitted through the blood to the sensitive brain, there its toxic influence was the exciting cause of tetanus and convulsions.

So obscure a disease, with so many factors of causation and with so little possibility of a satisfactory solution, must of necessity remain obscure. These possible causes are offered as suggestive, more than as facts needing no further demonstration, and are designed to call especial attention to the possibility that others may determine the influence of predisposition to consumption and syphilis as being the most prolific causes. A predisposition determines *what* a disease may be; but an exciting cause determines *when* it shall be. A predisposition to consumption is inherited, depreciates the chances of long life and operates at birth, as well as in advanced life; the same is true of syphilis and alcohol, and when the vital powers are so feeble as at birth, so much more will such influences disturb the functions of life. "The blood is the life," and any abnormal condition in that fluid from consumption, alcoholism or syphilis must be reflected upon the nerve centres and retard the activity of the brain, lessen nervous energy, and act idiopathically, thereby being the promoting cause of trismus. While these views may be unsupported by a formidable array of statistics or undemonstrated by autopsies, they are the result of thirty years of constant attention to the details of a busy practice, and I hope it may call the attention of thinkers to a class of cases but little understood, and to which very little attention has heretofore been paid.

THE USE OF THE GALVANIC CURRENT AS A LAXATIVE.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA.

Brillat Savarin well remarks, among the aphorisms with which he prefaces his "Physiologie du Gout," that the discovery of a new dish contributes more to the happiness of mankind than does the discovery of a new star. The physician may add that all such discovery is in vain in the pursuit and sum of human happiness un-

less good digestion abides with us and constipation keeps aloof. Shakespeare might, if it had been in accordance with the properties, have truly added to his phrase, "now good digestion wait on appetite," another line, "and pleasant defecation follow both."

Old, new, excellent dishes of whichever kind, are generally vanity and vexation of spirit if the consummation of all eating be not easy, regular, and attended with a species of satisfaction approaching pleasure. It would seem at first glance as if appetite and good digestion must always imply ease of defecation, and yet, although that is generally so, physicians know that there are individuals who enjoy lifelong keenness of appetite and good digestion, and nevertheless tend to be constipated. The general rule, however, is as indicated, that excellence in these conditions is associated, that absence of coördination of even the last with the other signifies malaise and ill-health.

In considering the cases of those persons who have good appetite and digestion, and yet tend to be constipated all their lives, and those of persons who experience only occasional attacks of constipation, we may add to them in lesser degree those of every man, woman, and child of civilized life, for the consideration of the subject brings us face to face with the conclusion that that particular life it is which is chiefly responsible for lowering the activity of the defecating function. Habits of body are formed by neglect as well as by practice. No longer ago than fifty years, school-girls had to be counseled that it was no evidence of feminine delicacy to neglect the ordinances of nature in this respect. Children of both sexes, even at the present day, are not generally taught that the most important hygienic duty of the day is to void the bowels. Men and women of the lower classes have no such rule of conduct. Habits come upon them, they do not seek to acquire habits, do not even know that bodily habits can be acquired. It is only when we come to the really educated in any civilized community that we find, outside of professional medical life, any appreciation of the importance of daily and copious defecation. And, at best, among all classes in civilized countries, such is the general life relating to food and exercise and general habits of living, and such the exigencies of that life, that irregularity in attempts at defecation tends to degenerate into the confirmed habit of constipation.

The conditions of civilization, pure and simple, are not, it will be observed, wholly responsible for this state of things, nor, it will be equally clearly seen, are they innocent of the responsibility, and hence instruction must have some effect in remedying the evil. Civilization prescribes that no one can normally defecate more than once in twenty-four hours, and that at a particular moment of the twenty-four hours. Hence, as that moment may be urgent for some other direction of energy, the other direction is often taken without positive necessity, and by so much every time that this happens, is the habit of defecation with ease lessened. That the conditions of civilized life have much to answer for in leading to neglect of regular defecation is readily to be seen if one going from it to a life of mountains and woods, with plenty of mental and bodily employment, ravenous appetite, and constant opportunity for immediate relief of the bowels, will note all his change of habits. He will find that he will often have a natural passage twice in twenty-four hours, instead of the single one which civilization has at best decreed for that space of time. There may not be, and often are not, indeed generally are not, any restraining influences amid the wilds. Time and place generally are propitious. Nature asserts herself without restraint, and reverts to her ancient promptings and ways. There is not a well-bred dog living in the heart of our civilization which does not first relieve himself before he is in the right spirit for his gambols, and he, like his master, and even more than his master, suffers from constipation, because even more than his master he is, when housed, constrained to habits of retention leading to constipation.

Enough has been said to indicate that constipation is generally an acquired habit in the individual. If we chose to go back to heredity, we shall find it be always an acquired habit. It is an inherited defect of civilization. Still, even under the conditions which cannot be escaped, much may be done to ameliorate the evil. Proper teachings in early youth give opportunity for development into healthful practice in later days, unremitting in intention to return to that which, however broken up for a time, should be sedulously practised until the habit is resumed.

The habit of chronic constipation, often superinduced by early and late neglect, leads through life to the abuse of cathartics, aperients, and enemas. There was a time, which I believe has now passed, when women were largely addicted to the taking of daily enemas with the view of improving the complexion. Nothing that the enema, however, could accomplish but would have been equally well secured by a natural evacuation of the bowels. The daily use of the enema was nothing but a tacit confession that there was a serious absence in the individual of proper peristaltic movement of the intestines. The practice did not tend to restore healthy function, any more than a cathartic or an aperient tends to restore it; quite the contrary, as every physician knows. All these means are temporary with relation to benefit. Exercise, food, massage, look further—to the the relief of constipation through the establishment of habit.

There is no true basis for the comparison of cathartics and aperients with enemas, as producing passage of the bowels. There is, however, a strong similarity between ordinary massage and treatment by the faradaic current; for whatever additionally the faradaic current may effect, it certainly executes massage of the most searching kind, and we find it capable, in all probability on this account chiefly, of stimulating the bowels, through percutaneous administration, to healthy peristaltic action. Here we have electro-massage as against ordinary massage, and as being both massage, even if one includes other effects besides those derived from massage, they are comparable. But what shall we say of the effect of the continuous galvanic current on the bowels? That it has such an effect, that that effect is not owing in any degree to property as massage, I shall not pause to discuss, for the statement that it has no property as massage no one will dispute.

Through treatment of prostatitis, prostatorrhœa, etc., I have been led, in conjunction with a coadjutor in the matter, to the discovery that the continuous galvanic current has, if administered as I shall describe, an immediate effect in loosening the bowels, which discovery may prove of therapeutic value in cases where treatment by cathartics, aperients, massage, or faradaic electro-massage are contraindicated, or if not contraindicated, where they would not be so desirable as treatment by the continuous galvanic current.

In describing the mode of administering the constant current for loosening the bowels, I cannot do so well as to mention how the poles of the battery are placed in my present mode of treating enlarged prostate, etc., for it was through this, which I have now adopted in preference to the mode of adjustment which I had in common with other practitioners employed, that the effect of the continuous current upon the bowels was discovered. The intra-rectal reophore, representing the negative pole, should be introduced to the usual distance in the rectum, and the patient should be allowed, with the sponge covered reophore, representing the positive pole, to adjust it from the front on the perineum. Thus the prostate is directly attacked by the continuous current, which passes through and around it, whereas when the indifferent pole is placed, as is usual, on the thigh, it causes the current to be deflected from the true direction. Moreover, no physician can graduate a current to suit at all moments the sensitive mucous membrane of the rectum. The patient can, on the contrary, graduate it to the greatest nicety by means of more or less pressure on the reophore, or by the temporary removal of the reophore, making the current as nearly constant as anything that can be controlled by man. This mode of treating enlarged prostate, etc., is so simple and efficacious that I mention incidentally my intention to have constructed a simple apparatus to enable persons suffering from affections of the prostate, who are so situated as to be unable to receive professional treatment, to treat themselves satisfactorily.

This, then, the manipulation that I employ for treatment of prostatitis, etc., is the manipulation best adapted to treatment for loosening the bowels. The strength of the current should be about that of one milliampére, rather less than more, so that the patient will feel at first as if no current at all is passing. In the course of fifteen or twenty seconds, however, he will begin to feel it gradually rising from the cold of the olive-shaped rectal electrode to the warmth of the same object, gradually heated to a point of painless tolerance. The slowness of the increase, as well as its steadiness, seems to be a factor in the success of the result sought. Shock, or even abrupt transitions in the strength of the current, seem to be prejudicial to success. The perfect confidence of the patient, derived from the certainty that the process will be gradual, and cannot be startling at any point, conduces to the result. Every one knows how important undisturbed repose is to the successful evacuation of torpid bowels. In about a minute after the application of the current, the sensation of desire to go to stool becomes manifest, and at the end of two minutes, the average patient can generally be affected to the degree requisite to secure a pleasant passage. I think that this process can, by repetition, be made to have constitutional effects in the alleviation or removal of chronic constipation. Of this, however, I affirm nothing, but merely throw out the suggestion without assigning my reasons for thinking that the effect may be made more or less permanent.

Two phenomena attend the administration of the continuous current in the manner which I have described. They seem to point to two at least of the efficient causes of the chief effect observed: 1. Depending upon the position of the fæces, an unmistakable trickling in the rectum is perceived. 2. If the pole at the perineum be quickly removed, the sphincter of the anus forcibly contracts. The conclusion, therefore, is inevitable, that, as to the first, a general discharge from the mucous membrane is stimulated, and as to the second, that the whole of the rectum and the lower portion of the bowels is dilated, both superinduced conditions working to the desired result.

Although a divergence from the main purpose of this description, I should not omit incidentally to impress here the strongest evidence which has yet been adduced as to the differential action of the two poles in mucous membrane passages. It is becoming well known that in the urethra the negative pole dilates the passage, whereas the positive pole contracts it, and hence, that the negative pole is the proper one for relief of strict-

ure of the urethra. The rectal experiments of which I have spoken repeat this evidence with reference to the rectum, and by means of a superlative test. I have said that when the intra-rectal negative electrode is in position in the rectum, and the moist sponge-covered positive electrode is in position on the perineum, and the current is flowing, that if the latter reophore be suddenly withdrawn, the sphincter of the anus forcibly contracts. The rectum had therefore been dilated by the passage of the current, to allow of the sphincter thus forcibly contracting. Now reverse the poles, so that the electrode in the rectum shall become the positive pole, and that on the perineum shall become the negative pole, and the sphincter of the anus contracts when the negative pole on the perineum is put into position, but remains perfectly quiescent when it is *withdrawn;* just the reverse of what is observable in the other situation of the poles, and showing that the positive pole contracts. Scientifically summarized, the effects referred to are that anode closure dilates, and cathode closure contracts, a mucous membrane channel.

If it be said that, as cathode closure produces contraction of the sphincter, that is, that contraction of the sphincter takes place without previous passage of a current, and consequently without any previous dilatation of the rectum, and if one be asked what evidence there can, therefore, be that, upon anode opening, which is also followed by sphincter contraction, there had been previous dilatation of the rectum, the presentation of the difference between the cases is almost the answer to the objection. In the first case, the current not having been flowing, whatever contraction of the sphincter through cathode closure takes place, must be to below the normal size of the sphincter and rectum. As there has been no action, there can be no reaction. On the contrary, in the second case, as the current has been, and is flowing, and the contraction through anode opening is produced by breaking the current, it is obvious that whatever change takes place must be *reaction*, and as the sphincter contracts, it must be apparent that the preceding *action* of the current had resulted *in dilatation*. The mucous discharge is in strict conformity with this action, inasmuch as parts secreting do not show increase of functional activity by contraction, but by expansion.

It is easy to be understood, then, that if the rectum is expanded by the passage of the continuous current through the presence there of the negative pole, and if at the same time the inner part of the lower bowel and the rectum is laved by a rapidly secreted mucous discharge, that, independent of the dynamic effect of the current, it should, when so applied, produce discharge from the bowels, and the fact that it so operates has been distinctly proved. That, as I have said, the effects may tend to be permanent, no one who has tested the efficacy of electrical treatment in many directions will be indisposed to hope. Meanwhile, relying solely upon what has been thoroughly established as a fact, I shall patiently await the result of experience to show what are the limitations of the efficacy of the treatment herein described.

1519 Walnut St.

MEDICAL PROGRESS.

Lead Poisoning.—Binet and Prévost have communicated to the Medical Society of Geneva the results of some very interesting researches on the subject of lead poisoning. Their conclusions are these: Animals poisoned by the daily ingestion of white lead presented the following symptoms: A progressive emaciation; anæmia from diminution and alteration of the blood globules, without leucocytosis; albuminuria, which, however, has been neither abundant nor constant; nervous phenomena—paralysis, aphonia, loss of reflexes, anæsthesia, rarely convulsions; the paralyses are curable when the lead is discontinued.

The anatomical features are these: A constant alteration of the kidneys, which become grayish, contracted, often cystic; nephritis and a special form of calcareous granulation, according with the type described by Charcot and Gombaut; fatty degeneration of the liver; frequently pericarditis and sometimes granulo-fatty degeneration of the myocardium; lesions of the peripheral nerves of the segmentary type; the medullary roots are rarely affected; regeneration of the diseased nerves has often been demonstrated.

The clinical examinations showed that lead accumulates chiefly in the kidneys, the quantity being greater as the intoxication is more prolonged. It is abundantly found in the bones; it seems to be deposited in the bony framework in the form of the phosphate. The liver generally contains but little lead, at least in slow chronic intoxication. The quantity may be large immediately after the ingestion of a large amount, but it diminishes rapidly and does not accumulate as in the kidneys. The muscles, spleen, nerve centres, eyes, lungs, heart, pancreas, genital organs and blood have also been examined for lead, but in all these it is found only in small quantities or is altogether absent. The embryo and the new-born animal from mothers with chronic intoxication rarely present traces of lead.

A large ovarian cyst in a rat contained a quantity of lead, especially in its walls.

Elimination: The urine carries away but little lead, hence the large accumulation in the kidneys; the quantity increases when the urine is albuminous.

The elimination in the bile is more important,

hence the small quantity of lead found in the liver.

The elimination in the saliva, excited by the administration of pilocarpin, is very feeble.

The slow elimination of lead and the sparing solubility of most of its salts explain the long retention of the metal in the body.

Two animals, after a prolonged intoxication from lead, were subjected to the influence of the iodide of potassium, but in spite of this treatment upon autopsy a large amount of lead was found in the kidneys. The same result was obtained with the ammoniacal salts.

Strophanthus in Pædriatics.—Dr. Moncorvo, of Rio Janeiro, has found strophanthus a very useful remedy in the treatment of diseases of children. As the result of a number of observations in its use he formulates the following conclusions:

1. Strophanthus as a cardiac and diuretic remedy in the diseases of childhood is a valuable acquisition, both on account of its promptness and energy of action and its complete harmlessness in the case of children even of a very tender age.

2. In cases of mitral or tricuspid lesions, with diminished secretion of urine, strophanthus administered in the form of the alcoholic tincture (Fraser's) promotes the reëstablishment of the heart's tonicity, regulates the rythm of its beats, and increases the amplitude and strength of the pulse. Almost without exception it acts as a powerful diuretic.

3. In the cases of pulmonary and broncho-pulmonary affections of childhood, complicated so often with cardiac insufficiency, strophanthus likewise renders excellent service as a cardiac tonic. This has been demonstrated in cases of asthma in children of from 9 to 11 years of age.

4. The therapeutical action of strophanthus does not appear to be transitory, for in a certain number of the little patients the happy results of its employment last long after the cessation of its administration.

5. No marked influence has been observed upon the central nervous system or the temperature.—*L'Union Méd.*

Some Applications of Salicylate of Sodium.—Dr. Stiller, of Budapest, reports on the uses of salicylate of sodium: Following the example of the English physicians in employing this remedy in diseases of the liver, he has found it to be the most energetic of chologogues. He has used it for five years in cases of gall-stone, and has satisfied himself that he is acquainted with no remedy that operates in a more certain and rapid manner. He prescribes it in four daily doses of half a gram each, given in half a glass of soda water or some effervescing draught; he generally adds to such a dose 0.01 grm. of extract of belladonna; warm flax-seed poultices should be frequently applied over the liver; strict diet should be observed, mostly of a liquid character; for drinking purposes an effervescing draught free from iron, is sufficient. Injections of morphine soon become unnecessary, and the patient should make use of the Carlsbad or Vichy cure. The writer has also found the salicylate of sodium an excellent remedy in exudative pleurisy; the fever abates after its use, and rapid absorption of the serous exudate occurs. Stiller likewise finds the salicylate of sodium possesses value as a means of differential diagnosis in cases where there is a question of serous or purulent exudate—prompt action occurring in cases where there is a serous exudate, the diagnosis and prognosis become easy. The dose of this remedy is 3–4 grm. per diem, which amount soon effects a diuretic action. Salicylate of sodium is also an excellent remedy in sciatica and recent cases of peripheral paralysis of the facialis.—*Ther. Monatshefte.*

The Contagiousness of La Grippe.—Dr. Proust has recently reported to the *Academie de Medécine* some interesting facts relative to the contagiousness of *la grippe*. A ship set sail from St. Germain on Dec. 2, and at Santander took on board a passenger who had come from Madrid. The day after his embarkation he was seized with *la grippe*, although the sanitary condition of the packet had been, up to this time, excellent. Four days later the ship's surgeon was attacked by the disease, and two days later one of the crew was seized. Then the disease became general; 154 passengers out of 436 were attacked, besides 47 sailors, making a total of 201 patients. These facts seem to be sufficient to establish the contagiousness of the disease, the case being proved not simply by the complications but by the disease itself.—*La Sem. Méd.*

Etiology of Malaria—Dr. Paltauf, of Vienna, in a recent paper on "The Plasmodium of Malaria," confirms the views of Marchiafava and Celli. Paltauf has examined ten cases of malaria; he describes the morphological appearance of the plasmodium malariæ before, during and after the attacks, and regards it as the cause of the disease. Dr. Kahler, of Vienna, in four recent cases and one old one, also found the plasmodium. All these patients recovered under the use of quinine, although authors have given an unfavorable prognosis on account of the presence of plasmodium in such cases.

Arsenic in the Bones.—The presence of arsenic in the bones has long been asserted, but it has recently been clearly demonstrated by the investigations of Brouardel and Pouchet. It is therefore important to look for this poison in the osseous system in medico-legal cases, especially when the poisoning is not of the most acute character.

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SATURDAY, APRIL 26, 1890.

PAUPER INSANE IN POOR-HOUSES.

After a struggle of three years, the New York Legislature has just passed a law requiring that the pauper insane shall be provided for and maintained solely by the State instead of, as heretofore, by the counties. Exception is made of the counties of New York, Kings, and Monroe, that maintain well equipped insane asylums. The local superintendents of the poor have vigorously opposed this transfer, and successfully until this time. But the necessity of this action has been strenuously urged by some physicians and a number of unselfish ladies; and if there was any doubt regarding their good judgment it was dissipated on the publication of the first annual report of the State Commission in Lunacy for 1889.

This document is one of the most remarkable reports that has been published for a long time, and one instantly asks if the abuses it portrays are true of a State possessing the wealth and intelligence of New York, what must be the condition of affairs in States that are less wealthy. We are informed that the insane departments of alms-houses contain from twenty-five in the smallest to four hundred in the largest, and that 1,848 patients are confined in these institutions. In only two of the institutions were resident physicians employed, and in only four or five others were physicians required to make daily visits. Usually the physician visited the institution from one to three times a week, and he was always officially subordinate to the keeper of the institution. Their compensation averaged less than $325 per annum, a renumeration that was certainly inadequate for the character of the services required, and they were hampered by insufficient medical stores. Case records were not kept, and the medicines were often intrusted to other patients for administration. Mechanical restraint was applied at the discretion of unskilled attendants, the diet was often inadequate, the bedding was often foul, the water supply insufficient —hot water being obtained by heating in kettles, and four or five patients sometimes being bathed in the same water. Magazines or games for the diversions of the patients were not furnished, the day attendants were usually unskilled, and there was insufficient night attendance with meagre, if any, provision against fire. A few pages that are allotted to a description of some special abuses noted by the commission, describe a state of affairs that might be supposed to be contemporary with PINEL if our experience had not convinced us, that in many of our States these abuses are paralleled if not exceeded.

It would seem as if a reform work might be intrusted by each State medical association to a committee, that each county or municipal institution containing pauper insane patients should be thoroughly inspected, and a report made of the number of cases, the capacity of the building, the professional attendance, the nursing, food, bedding and clothing, case records, restraint if any, and general features of the administration. And where the latter seemed particularly reprehensible, due publicity of the obnoxious features would undoubtedly awaken a lethargic public sentiment and the abuses would be remedied.

A PHYSICIAN'S PERSONAL HOBBIES AND PRESCRIPTIONS.

Every physician who has been actively engaged in his profession finds that there is a wide range of remedies that are valuable only in the secondary list, and that after all his main reliance in routine work is upon a few well known and long tried remedies. OLIVER W. HOLMES says: "Give me opium, wine and milk and I will cure all diseases to which flesh is heir." Now while this is hyperbolic, it appeals to the experience of all as a terse statement of fact. Just as a mechanic will fashion a wide variety of articles with a few simple tools so the physician with a few good

remedies mastered in their every detail, will meet the varying exigencies of his daily round, successfully. But this very knowledge has its dangers. It is characteristic of mental action that it repeats itself the more easily with each repetition —and we are but human. It is less labor to use the old formula again than to devise new. One man runs largely to bismuth, another to iron, another to hypophosphites. Again what is still worse routine is to treat all maladies in one line, to see nothing but disinfection for instance, or to see but one organ of the body at fault, and make the womb, or ovary, or kidney or whatnot, depending upon the individual's specialty, the offender.

It is easy to criticise and very hard to put oneself in the attitude of the penitent and say "Is it I?" and while we each may withhold our confession from the rest of the profession it is well for us to act the censor upon ourselves. Remedies are not to be ignored or discarded because they are new—nor should the new supplant the old—until by very careful observation and estimate of their efficiency, their superior merit is demonstrated.

The present temptation of the physician prone to a life of elegant leisure as well as to those who are over burdened with work, is to ignore personal responsibility, accept the formula and the dose as suggested by the enterprising manufacturer, and become in fact what they may be loth to admit—the distributors of medical wares—simply responsible for a certain vague idea that for the cure of a given disease a certain remedy should be prescribed. There are helps to the practice of medicine which may easily prove hindrances, and a habit of indolence or indifference in the matter of prescribing is not simply an imposition—it is a crime.

MEDICINE IN THE CONGO FREE STATE.

MR. HERBERT WARD, the African explorer and former officer under Stanley, has illustrated the status of medical knowledge in the Congo country by a bit of his own personal experience in the central parts of the Dark Continent. After premising that the female members of the population are so ground down and debased as to be devoid of the emotional nature, sentiment, sympathy and nearly all parental affection, he states that he met with one exception, and only one. It was in the case of a sick child whose mother obtained Mr. Ward's assistance, and received from him a good, "civilized dose of medicine," as he expresses it. The little one recovered, and at midnight shortly afterwards the traveler was awakened by a person speaking in his tent. Something was said in a soft, low tone, which Mr. Ward understood to mean that the mother in question—for it was she—wanted to thank him for his kindness to her child, and she said that she had brought him, as a present, the only thing she had in the world that possessed any value to him. It was an egg which she brought, and she had done so in this stealthy manner, at the dead of night, because if the other women of her tribe knew of her visit she would be beaten terribly. She wished Mr. Ward to have the egg cooked for his breakfast in the morning. Her wish was granted so far as the cooking was concerned, but Mr. Ward concluded not to eat it, for he discovered that it was not strictly physiological in type. Mr. Ward has described the medicine man of the tribe of the Bacongo as "a fierce-looking man with his hair all askew and a fetich in his hand." He has the power of life and death among the benighted people of his tribe, and on fête days administers poisons to the women who have been designated for sacrifice. His victims submit meekly to their medicine man's deadly dose, and will not even accept rescue, in some instances. On one occasion Mr. Ward was informed regarding the approach of a fête and sacrifice not far distant from his camp, in one of those tribes. He was told that a beautiful young woman had been chosen for the poison-cup, and he determined to push on to that village and prevent the murder. He did so, the young woman was captured by him, despite her own resistance and the opposition of all the natives. The woman was taken to Mr. Ward's camp, fed and clothed, but she took the first occasion to escape and to return to the tender mercies of the medicine man. Mr. Ward learned afterward that the ordeal was carried out in the presence of her admiring relatives and tribe, that she took the poison and died in the full courage of her convictions. The stern medicine man, likewise, was firm and did not spare his victim by giving a placebo. A more civilized practitioner would have weakened, probably, in his admiration for the victim's zeal, and spared the life so freely offered.

THE RUSH MONUMENT.

The able address of Dr. William Pepper commemorating the life and services of Dr. Benjamin Rush, which was delivered at the last annual meeting at Newport, will be found in the present number of The Journal. We commend its careful perusal to all our readers. The Report of Dr. A. L. Gihon, Chairman of the Special Committee, is also presented at this time, and those who were present at its delivery will be sure to read it with special interest.

The time is opportune for the re-presentation of this subject. The purposes of the Association are fully set forth in these papers, and it is sincerely to be hoped that they will so impress the minds of its members as to lead to prompt and generous action on their part, when assembled at Nashville. Among all the monumental tributes that shall express gratitude for signal achievements there should be *three* at least, commemorative of medical men: one for Dr. Rush, another for the brave Warren, who fell at Bunker Hill, and the third for Dr. Ephraim McDowell, the father of gynecology. They must and will be built. Let the honor of the building be accorded to ourselves and not to our children.

EDITORIAL NOTES.

HOME.

The Nashville Meeting.—It is evident that the Committee of Arrangements for the Annual Meeting on May 20, has its work well in hand. The Section Committees have secured a full supply of valuable papers, which, as they are submitted, will become the property of the Association, and are to appear in due time in its journal. The gathering of Medical Editors will doubtless bring together a full representation of our best medical writers, and the Convention of Professors will give an added interest to the annual assemblage. The Nashville Meeting should be, and doubtless will be, one of the most interesting in the history of the Association.

The Illinois State Medical Society.—The fortieth annual meeting of this Society will be held in Chicago, beginning May 6, 1890, and will continue its sessions for three days. It is a vigorous organization, and has an admirable record in the past. The coming meeting promises to be one of its *best*. There will doubtless be a large attendance. Every county in the State should be well represented.

Dr. Henry H. Smith, of Philadelphia, died April 11, aged 74 years. He was the well-known emeritus Professor of Surgery at the University of Pennsylvania, and formerly the Surgeon-General of his State. His services to his State during the late war were most valuable, not only as an organizer of the hospital service, but in participating in the operative labors following the battles of Antietam, Winchester, Fair Oaks, West Point and Cold Harbor. His services as a teacher of surgery covered a period of thirty years. He was called to the chair of surgery in 1855, in the University, and held that position over fifteen years. His hospital appointments were numerous, and his contributions to medical literature, surgical papers, and hand-books on operative surgery were esteemed among the best of their time.

Dr. J. S. Dorsett, Medical Superintendent of the Texas State Hospital for the Insane, at Austin, was violently assaulted by a patient, March 24, and was seriously injured by being struck from behind with an iron bar.

Two gigantic skeletons of mound builders have been unearthed near Hamilton, Ohio, with a well preserved specimen of pottery of the mound builder's period. The jaw bones are extraordinarily large and possess all their teeth in an excellent state of preservation.

The cause of medical education in New York City has received a somewhat unexpected donation. The Post-Graduate Hospital and College will receive the sum of $10,000 from the estate of the late D. B. St. John, formerly State Senator from Newburgh.

The Medical Editors' Association.—The annual meeting of medical editors, as already noted, will be held in the lecture rooms of the Dental Department of the Vanderbilt University at Nashville, on the evening of May 19. Dr. I. N. Love of St. Louis, editor of the *Medical Mirror*, will preside. The medical press of this country should, and doubtless will be largely represented and a most enjoyable meeting is anticipated.

The Special Course in Abdominal and Pelvic Surgery.—The recent special course in abdominal and pelvic surgery, by Drs. Senn, Fen-

ger, Parkes and Belfield, at the Chicago Policlinic, seems to have met with general commendation among the physicians—one hundred and twenty-seven in number—who attended. At a meeting of the class held at the completion of the course, the following resolutions, presented by Dr. E. P. Cook, of Mendota, ex-President of the Illinois State Medical Society, were unanimously adopted:

Whereas, We desire to give expression to our appreciation of the successful and satisfactory manner in which the course has been conducted to its conclusion, be it therefore

Resolved, That we would hereby convey to the faculty and officers of the Chicago Policlinic our thanks and appreciation of the discernment and skill that have conceived and executed a course demonstrative of the recent marked advances in the surgical treatment of abdominal and pelvic injuries and diseases.

Resolved, further, That we are under especial obligations to the several distinguished surgeons who, by their lectures and demonstrations, have made this, as we believe, the best course in advanced surgery ever delivered in this country.

Resolved, finally, That it is our deliberate conviction that we have here in Chicago and in the West every requisite in skill and knowledge among teachers, and in abundance of clinical material, to thoroughly qualify all who would engage in the profession of medicine and surgery.

We are informed by the Secretary of the Policlinic that the course will be repeated by the same lecturers, on a more elaborate and complete plan, next winter.

Dr. E. C. Seguin, formerly of New York City and now of Providence, R. I., visited the University of Toronto on March 11 and 12, at the invitation of the medical society of that institution, in order to inaugurate an annual lecture course pertaining to the higher subjects of medical interest. He delivered three discourses on the treatment and management of certain neuroses.

Medical Legislation.—The anatomical Bill for the District of Columbia passed the United States Senate on April 12. We anticipate that it will soon become a law, and that the study of anatomy will thus be legalized at the National Capital.

The St. Bartholomew's Hospital and Dispensary, at New York, has just issued its first annual report. It is a down-town institution especially devoted to cutaneous and genito-urinary diseases, whether specific or otherwise.

Dr. Wm. T. Belfield, 612 Opera House Building, Chicago, Ill., U. S. A., respectfully solicits information concerning unpublished cases of operations upon the prostate, especially for the relief of the so-called hypertrophy of the organ.

Marion Sims Medical College.—A new medical college, bearing the name of one of the most illustrious of medical men, is being developed in St. Louis. The organization is so far perfected that the first session will open in the autumn of the present year. A strong movement has been organized for the endowment of a hospital in connection with the new enterprise, and the prominence given to clinical teaching will be a special feature in its course of instruction.

The death of Surgeon Rufus H. McCarty, of the "Yantic," took place April 13, by pneumonia. He had been in the Naval service since June, 1875, having been appointed from Michigan.

The Medical College Conference.—We sincerely hope for best results in connection with the meeting of College Professors at Nashville in connection with the annual meeting of the American Medical Association. Possibly while Section work is being done during the several afternoons, those especially interested in the securing of more uniform standards of requirement for medical graduation can be convened for the furtherance of this important work, and by mutual conference, inaugurate a plan which shall secure the desired results.

Chicago Policlinic.—Dr. N. Senn and Dr. Chr. Fenger have been elected regular Professors of Surgery in this institution. In addition to clinical work, they will present a special course in abdominal surgery twice yearly.

FOREIGN.

Sir Manochjee Petit, a wealthy Parsee merchant, of Bombay, has donated a lac of rupees toward the founding of a leper-hospital at that city. This is about forty-six thousand dollars. It is estimated that this generous man has dispensed in charities more than a million of dollars.

The Fifty-eighth Annual Meeting of the British Medical Association will be held at Birmingham on Tuesday, Wednesday, Thursday and Friday, July 29, 30 and 31, and Aug. 1, 1890.

TOPICS OF THE WEEK.

FOOD IN ACUTE DISEASE.

We all remember the remarkable words of the late Dr. Graves, of Dublin: "Lest when I am gone you may be at a loss for an epitaph for me, let me give you one in three words, 'He fed fevers.'" Since the time when these pregnant words were uttered there has been little inclination displayed by physicians in this country to go back to the starving methods of some of Grave's distinguished predecessors or contemporaries. Yet it can hardly be doubted that the conclusion arrived at by some of the older physicians, that the free administration of food in fever occasionally intensified the febrile process, rested on some basis of practical observation; and we do not, in the present day, altogether lack occasions of observing that the indiscreet administration of food in acute diseases, food unsuitable either in quality or quantity, is distinctly injurious.

No one can be more willing than I am to recognize the necessity and importance of administering a sufficiency of food to febrile patients, especially with the object of lessening or compensating for that tendency to destruction of tissue, which is one of the most serious consequences of fever; but I am at the same time convinced that, especially in large public institutions where patients are nursed *en bloc*, the free administration of food and alcoholic stimulants is far too much a matter of routine, and sometimes partakes more of predetermination than discrimination. I have seen a nurse, a competent but very firm lady nurse, stand with teeth set and lower jaw advanced, and every firm outline of her muscular frame breathing forth unyielding determination, over a fever patient, and forcibly thrusting down his throat, an easy conqueror in this unequal struggle, the detested hourly "feed" of black beef-tea, mixed with cheap port wine (for what public institution ever uses anything but cheap port?). The poor fevered lips and parched tongue are craving all the time for "a cup of cold water," which is denied them, either because the patient is not sufficiently conscious of his wants to ask for it, or because "the doctor has not ordered it."

I would plead, then, for more discrimination and less of routine in the feeding of fever patients, and I would suggest for consideration the fact that food undigested only serves to intensify the febrile process and adds to the distress of the patient, and that in administering condensed solutions of nitrogenous extractives we may incur the danger of adding to the already large accumulation of nitrogenous waste in the blood. I would also put this question to the medical officers of hospitals: Are you satisfied that those cheap and common qualities of wines and spirits, almost universally used in such institutions, a single glass of which many of us here in sound health would wisely fear to take, are you satisfied that they do not also injuriously affect the fever patient, who, moreover, may have been entirely unhabituated before the attack to the use of such beverages?

We feed fevers and we are undoubtedly right in so doing. Bauer and Künstle appear to have established, by careful observations on the diet of typhoid fever patients, the fact that a due "supply of albuminous food to a fever patient" effects a saving of albumen in the body, "for though the excretion of nitrogen is increased, the loss of the same element from the system is reduced.". But do we not sometimes overfeed fevers, and use less discrimination than is desirable in the kinds of food we administer?

It has appeared to me that we may formulate two chief rules which should guide us in the feeding of cases of acute disease. 1. Endeavor to utilize food to the greatest extent that is safe and possible for the purpose of checking the waste of tissue which is associated with the febrile process. 2. Be careful to administer no food that cannot be readily absorbed and assimilated. Do not overlook the fact that the functions of the digestive organs are gravely impaired during fever, and therefore, if we give food which the patient is unable to assimilate, this undigested food will decompose in the stomach and intestines, and cause much local irritation and augment the pyrexial movement.

I have been accustomed to teach, and I submit that teaching to your criticism, that in acute and short typical and febrile attacks, such, for instance, as one of acute croupous pneumonia of average severity and running an average course, we should not manifest any anxiety as to the taking of much food, unless in the aged and feeble, for by forcing the consumption of a considerable quantity of food in such cases, in the absence of all appetite, and with obvious febrile derangement of the digestive organs, we do more harm than good.

There is a general consent amongst all authorities that, owing to the interruption of normal gastric digestion in fever, all food should be given in the fluid form; that is, in a form that can be readily and immediately absorbed, that it should be given in small quantities and at short intervals. The two kinds of fluid food most commonly used in cases of acute disease are, first, milk, and secondly beef-tea, and under the latter denomination I would be asked to be allowed to include all fluid meat extracts, broths, soups, meat juices, etc. The consideration of both these forms of food will probably yield some suitable topics for discussion.

The very great convenience of milk as a food has, I think, acted in a certain sense as a snare, for there is a tendency, especially with nurses, to think no evil of that which is so handy, requires no preparation, and gives so little trouble. But the great drawback in the use of milk in acute diseases is that, although a fluid food out of the body, it becomes a solid food in the stomach or intestine. No doubt it is an excellent food in all cases in which it is well tolerated and quickly digested and absorbed, but there are many cases in which it is not so, and when these happen to be cases of typhoid fever very serious injury may be done the patient if this peculiarity is not observed. I have seen several cases of typhoid in which the administration of milk has not appeared to cause any gastric disturbances, but yet has produced great intestinal irritation, and the motions have been largely composed of firm milk curd. One of the reasons why milk so fre-

quently disagrees with patients is that it is given in too concentrated a form and in too great quantity.

Sir Henry Thompson has called attention to the absurd custom, now so prevalent, of using milk as if it were a simple beverage, and to drink it like water, with quantities of solid meat and other food. Why should we hesitate to dilute the milk we give to fever patients? They require water, pure water, in much larger quantity than they usually get, and yet we hesitate to mix water with the milk we give them. Their digestive powers are excessively feeble, and yet we will give them concentrated foods! When we wish to rely on milk as a food in acute disease we should give it in small quantities at a time at short intervals, mixed with water or, better, with an alkaline water such as Vichy or Apollinaris. I am accustomed in hospital practice to prescribe powders, each containing 20 grs. of bicarbonate of soda and 20 grs. of common salt, and to direct that one such powder should be added to every pint of milk, and this to be diluted when administered with an equal quantity of water. Two ozs. of milk and 2 ozs. of an alkaline water every hour (and a fever patient requires a drink every hour) will give the patient 2½ pints of milk a day. I am, of course, thinking of cases in which the digestion of milk is difficult.

Greater use ought also to be made of the whey in those cases in which milk is not digested readily. I have often used it in private practice and in hospital with great advantage. It can be prepared in a pleasant form by boiling a pint of milk with two or three teaspoonfuls of lemon juice, and a few fragments of lemon peel for the sake of flavor; if the curd be well broken up, then strained through muslin, and all the fluid pressed well out of the curd, much of the cream and some of the finely-coagulated casein will pass into the whey, which will thus become a fairly nutritive fluid. If necessary, it can be made more nutritious by the addition of meat juice. Or if an egg be whipped up with twice as much boiling water, added slowly and then strained, a fluid will be obtained holding in suspension a considerable quantity of albumen coagulated in fine particles, and this may be added to whey (or to beef tea), thus supplying the defective albuminate.

I must not dwell longer, however, on milk. I merely make these suggestions with the view of eliciting further observations. I will ask you at the same time to consider the use of "butter-milk" as an invalid food, not so largely used in this country as in Germany, but calculated, I believe, to be of service in many cases of gastric difficulty. It is highly acid from the presence of lactic acid, and it contains the casein of milk in a very finely divided form. I have known dyspeptic patients to live upon it in comfort for considerable periods at a time, taking only a little thin water biscuit besides.

Another form of fluid food very extensively used in cases of acute disease is "beef tea." This term is usually applied to very strong extracts of beef, and this fluid is generally estimated in exact proportion to its concentration; why, I have never been quite able to understand. As I have already said, a patient with pyrexia requires and should be given much water; why not give him some of that water with his beef extract? The intense dislike of beef tea which many patients manifest is especially directed to this very concentrated form. It is mere slavery to routine—mere want of resource—that has perpetuated the invalid's sad restriction to milk and beef tea. Conceive the dread monotony of a six or seven weeks' limitation to these two articles of diet. Now there are many forms of meat infusion or meat extracts that can be rendered very palatable by suitable care in preparation, infinitely better adapted to serve as foods in pyrexial cases than strong beef tea. Well-made mutton, veal and chicken broths, to which some well-strained oatmeal or barley gruel can be occasionally added, make excellent invalid foods. They contain in a dilute form the same constituents, and, with the additions I have named, even more nutritive alimentary principles than beef tea. But clear soups—*consommes*—are exceedingly agreeable, readily absorbable and stimulating foods, and they usually contain some vegetable juices and salts which greatly add to their food value.—I. Burney Yeo, *Brit. Med. Jour.—Canada Lancet.*

ELECTRICAL INJURIES.

In an interesting article Dana, in the New York *Medical Record*, November 2, 1889, writes of the dangers of strong electrical currents. The following is a summary of some of the points which he presents:

The extraordinary increase now going on in the practical application of electricity, nearly $100,000,000 being already invested in lights and power alone.

A practically new class of injuries met in connection with the new industries. Such injuries have been heretofore produced by lightning, and they have been consequently rare.

These injuries are not numerous or serious as compared with those met with in connection with other great industries. There have been in ten years only about 100 deaths in the whole world from artificial electric currents. The railroad kills annually over 2,500 people (2,541 in 1880), and injures about 6,000 in the United States alone.

Electrical currents produce three kinds of severe accidents. They kill at once; or they burn severely; or, by the mental and physical shock, they cause traumatic neurosis. Usually, if they burn severely, they do not kill. Hence practically, the rule is, if contact with electrical wires does not kill, the victim gets only a burn or a harmless shock. In very rare cases the current seems to affect the nerves or nerve centres, causing paralysis.

The minimum current safe to receive is not definitely known. Probably 800 to 1,000 volts of continuous current, and a third less of alternating current, would not be fatal. The wires for lighting and for power carry the more dangerous currents.—*Boston Medical and Surgical Journal.*

MONUMENT TO DR. PHILIPPE RICORD.

A committee has just been organized, under the presidency of Prof. A. Fournier, with the view of raising a monument to the memory of the late Dr. Philippe Ricord. Dr. Horteloup has been appointed secretary of the committee, to whom all subscriptions should be addressed, at 76 Rue de la Victoire, Paris.

PRACTICAL NOTES.

THE ANTISEPSIS OF THE RENAL PASSAGES BY THE INTERNAL USE OF SALOL.

In the intestinal tube, says the *Therapeutic Gazette*, February 15, 1890, as a consequence of the action of the pancreatic juice, salol splits up into carbolic and salicylic acids, which are then eliminated by the kidneys, carbolic acid without being changed, salicylic acid after combining with sodium. Investigations by Nencki, Sahli, and Lépine have proved the truth of this statement beyond contradiction, and these writers have, as a consequence, recommended its internal use in "internal disinfection" in cholera, typhoid fever, and bacterial diseases. Dr. Dreyfuss (*Wiener Medizinische Blätter*, December 19, 1889), bearing these facts in mind, has recommended its use internally as a means of inducing the passage of an antiseptic fluid through the kidneys, ureters, bladder, and urethra; and claims that it acts in a much more intensive manner, and covers a wider field than can be accomplished through the injection of antiseptic fluid. Sahli further has shown that the urine of patients who have taken salol internally is aseptic, and that salol in large doses is well borne and never produces toxic symptoms. It is, therefore, quite as suitable for producing antisepsis in the urinary passages as naphthol is for the antisepsis of the intestinal tract. Dreyfuss has employed salol, either alone or in composition with various balsamics, in blennorrhœa, the full dose varying from 75 to 120 grains. Even in acute cases, treated at the very outset, this mode of treatment rapidly diminished the secretion, and in some few cases arrested it within a few days. Its effects are especially marked in combination with the use of cubebs or copaiba.

Finally, Dreyfuss recommends the use of salol in operations upon the urinary organs, for in this way the urine is kept aseptic, and one source of danger is thus avoided.

SALICYLATE OF SODIUM IN CHOLELITHIASIS AND PLEURISY.

Professor Stiller, of Buda-Pesth, has used salicylate of sodium as a cholagogue for five years, and has found it better than any other drug in rapidity and certainty of effect. He gives the following illustrative case, which is one out of many: A man, æt. 50, had suffered for about four months almost daily from severe bilious colic, and had been jaundiced for about three months. Rigors, with a temperature of 40° C., frequently occurred. He was so emaciated that his appearance suggested cancerous cachexia. The liver was enlarged and resistant, but smooth. The gall-bladder could not be felt. After a week's treatment with salicylate of sodium the pains and fever disappeared, the icteric color decreased, vomiting ceased, and after a four weeks' stay in the hospital he was dismissed cured. The details of the mode of treatment are as follows: Half a gram of the salicylate was given four times a day. It was given in half a glass of soda water, or any other alkaline water—never in wafers, as these increased the gastric irritation. Usually 0.01 gram of the extract of belladonna was added to each dose, as a non-constipating anodyne. Linseed poultices were applied over the liver. The patient was kept on moderate diet for several days, and alkaline water free from iron, was given as beverage. Occasional pains were relieved by injections of morphine. Carlsbad and Vichy water was ordered by way of after treatment. The cholagogue properties of the drug had also been proved by experiments on animals. In cases of pleurisy, Professor Stiller had noted a very striking diminution of the effusion when salicylate of sodium was given. Absorption occurred in a surprisingly rapid way, and Dr. Stiller recommended the drug, even for diagnostic purposes, as excluding the purulent character of the exudation. From 3 to 4 grams in solution were administered daily, a spoonful being given every hour or two hours. The primary effect, no doubt, was on the kidney and the increased secretion of urine favored absorption. It was only recently that he had observed, in a case under his care, that the quantity of urine was increased from 650 to 2,000, and even 2,300 cubic centimetres under the influence of salicylate of sodium. The drug was also useful in sciatica.—Vienna Corres. *British Medical Journal.*

SIR ANDREW CLARK'S PILL FOR CHRONIC CONSTIPATION.

An anti-constipation pill, a little different from some others offered for the same purpose, bears the name of the eminent president of the Royal College. It contains one-half a grain, each, of aloin, extract of nux vomica, suphate of iron, powdered ipecac and myrrh. This pill should be taken half an hour before the last meal of the day.

SALOL IN TONSILLITIS.

Salol has proven of much service in the treatment of tonsillitis and pharyngitis, when given in doses of 60 grs. per diem. It is equally serviceable in scarlatinal angina and suppurative tonsillitis. On account of its insolubility it is prescribed suspended in mucilage; shake well before using; exclusively milk diet. The dysphagia rapidly disappears, the fever subsides and the progress of the case is satisfactory.

ASSOCIATION NEWS.

American Medical Association, Fortieth Annual Meeting.

REPORT OF THE RUSH MONUMENT COMMITTEE.

Your committee find themselves, unfortunately, not able to report *progress*, measuring the actual progression during the past year by their several expectancies of life. They can not beguile themselves into the belief that, at the present rate, any of them can ever hope to see the work completed upon which they set out with such enthusiastic confidence five years ago.

When the American Medical Association convened in Washington in 1884, its members from every State and territory almost forgot the professional reason of their assembly in gazing upon the objects of interest presented to them in that most beautiful of cities. Not by any means the least attractive and admirable of these objects, which appealed to the national pride of the visitors from whatever quarter and corner of the Union, were the statues of the men whose lives are part of the nation's history, and whose names are household words in every village that boasts a school. These effigies of heroes and patriots had been judiciously distributed over widely distant parts of the city, in conspicuous sites at the intersections of great thoroughfares whose admirable topographical arrangement, giving the eye full sweep in every direction, enabled them to be seen from many far points. Here the stranger was confronted by a monument in marble or bronze of some one of the famous executive heads of the government; there by the martial figure of a military chieftain or naval captain. The contour of the Corcoran Art Gallery, embellished with marked appropriateness with marble statues of the world's great artists, had prominent among them their American compeer, Thomas Crawford. At the portals of the Supreme Court of the United States sat the counterpart in bronze of its own greatest Chief Justice, John Marshall, the *Law's* illustrious exponent; and on the green mall before the halls of *Science* stood in silent dignity the form of the scientist Joseph Henry, American by nativity, cosmopolitan in fame. Besides these and others already there, were soon to be, the visitor was told, *Religion's* testimonial of Wesley and *Philanthropy's* tribute to Peabody, while even a few deaf-mutes were planning, and have since completed, a statue of their great teacher, Thomas Gallaudet, exemplifying *Education's* contribution to our national renown.

But nowhere was to be seen, nor had yet been suggested, any evidence in stone or metal that our profession had had its memorable man. Even within the Memorial Hall of the Capitol, among the eminent citizens whose statues had been contributed, two by each State, there was no physician. So notable was this lack that the query suggested itself, Is it a fact that among the builders of this nation *Medicine* has not furnished one? Have only painters and sculptors, presidents and lawmakers, generals and admirals, scientists and discoverers, teachers and divines, philanthropists and politicians, deserved this recognition from our country? Has there been no great doctor in medicine whose life has been as exemplary as theirs? None who has, like them, merited the crown of the patriot? None whose name has been known beyond the narrow circle of his own home?

Probably the medical residents of Washington felt the more keenly the omission, of which they were daily reminded, of a memorial of a member of their own fraternity; and when, as one of these, your reporter broached the matter to several of his fellow members, he was urged by them to bring it at once before the Association, which he accordingly did in the resolution that led to the establishment of the committee who are now before you.

It was beyond question that the medical profession of the United States had within its fold in the first days of the Republic, as it has to-day, at the opening of its second century, men who were and are the peers of these in any other profession or vocation in life; but it is unfortunately true that our profession is strangely indifferent to the assertion of its proper exalted place in the social system. While in this country the physician does not meekly acquiesce in the priority of rank and precedence elsewhere given to others of far less noble occupation, we, nevertheless, do join in hurrahing over generals and admirals, and neglect to do conspicuous honor to the equally great men in our own ranks. Yet, where can there be found among the patriot heroes of the Revolution a grander figure than that of *Benjamin Rush?* Who so preëminently worthy of representing the profession of medicine among the mighty men of mark of the era of our independence? In honoring him medicine is honored and ourselves, as members of that profession, each also honored.

Your Committee had intended to review the claims of Benjamin Rush to be commemorated as the greatest physician America has ever produced, but most happily for them, Dr. Pepper in his eloquent Address on Medicine has said all and more, and that far more impressively than they could have done. What more can be said in appeal to the physicians of America to contribute the means to erect this memorial? To-day our profession in the United States numbers more than one hundred thousand members, and your Committee have felt confident that among that number there would be at least forty thousand, who would spontaneously contribute one dollar each toward the erection of a monument, unexceptionable as a work of art, a

fitting testimonial to the great man portrayed, and creditable to the great profession of which he and ourselves were members. Alas! at the end of five years, their Treasurer reports that he has only received the first thousand of that forty on which they had so confidently counted.

It is true that the histories of other great monuments reveal similar discouraging delays. The splendid memorial shaft to Washington now standing on the banks of the Potomac, and which was only dedicated, while still unfinished, on the 22nd of February, 1836, began with a resolution adopted at a meeting of a few patriotic citizens on the 31st of October, 1833, at which a scheme for raising funds by small subscriptions of one dollar each was matured and laid before the public. "The measure," says our treasurer, Dr. Toner, the historian of that monument, "met with a liberal response from the people. It was the purpose of the Society to raise and expend a million of dollars on the monument. In 1836, the sum of twenty-eight thousand dollars had been raised and securely invested at interest. Nine years later a design was accepted and three years after, on the 4th of July, 1848, the corner-stone was laid. It rose to 150 feet and then the work ceased, and for eleven years the unfinished shaft was a constant reminder of neglect, and only the approaching centennial of the Declaration stimulated Congress to contribute to its completion."

In our own immediate day, we have the lamentable spectacle of the neglect to erect the projected statue to Grant, and of the tedious delay in building a pedestal for the statue of Liberty in the harbor of New York.

Nevertheless, we have but to look across the Atlantic to Italy where a statue to a patriot physician, *Agostino Bertani*, has been conceived since this to our own greater patriot, completed and unveiled at Milan on the 30th of May of last year. How many years before our own undertaking can be completed! Or—nearer at home—to a little band, with only the community of loss of voice and hearing, who have, in four years, contributed among themselves, between twelve and thirteen thousand dollars, with which they have erected in Washington, on Kendall Green, before the National Deaf-Mute College, their monument of Gallaudet, which will be unveiled the day after to-morrow, while in five years, less than one physician in every hundred has been found willing to contribute a simple dollar to the commemoration of this greatest of American physicians!

With an object so manifestly commendable and one that has received such unanimous approval; with words of encouragement and proffers of aid to this very time, one eminent medical writer, within a fortnight, having urged us not to abandon our undertaking as "the profession do not yet appreciate Rush's claim to pre-eminent recognition," and another, a distinguished medical editor, even later saying, "You can count upon any assistance in my power to further your commendable project to honor the memory of our greatest medical patriot;" after the exalted eulogy of Rush in the eloquent commemorative address of the President of the College of Physicians of Philadelphia, Dr. Mitchell at the centennial anniversary of the institution of that distinguished body, in 1887, who approached his task "with reverent doubt of my powers to do justice to the greatest physician this country has ever produced;" after Dr. Morton's extolment of his thirty years' services as Physician of the Pennsylvania Hospital, pronouncing him "a man whose views were half a century in advance of the times;" after the address before the Medico-Legal Society of New York, by the President of the American Neurological Society, Dr. Mills, who selected "Benjamin Rush and American Psychiatry" as his most appropriate text—an association, the justice of which Tuke, of London, recognized;—after another Englishman, Benjamin Ward Richardson, in analyzing Rush's position in medicine, has directed attention to his standing as a patriot, politician, philanthropist, orator, teacher and man of letters; after the testimony of the Chairman of our Committee on Arrangements, Dr. Storer, before the Section on Obstetrics of this session, yesterday, to Benjamin Rush, obstetrician; and after the classic address in medicine to which you have just listened from the learned Provost of the University of Pennsylvania, himself so eminent that no living American physician stands above him; after all this, your committee are constrained to feel that they may be themselves to blame for the tardy progress of the enterprise, and they are, therefore, ready to resign into your hands the trust you have confided to them, that you may select others who may discover some shorter road to success than they have done. In doing so, they beg to be permitted to give utterance to the earnest wish that nothing may ever cause you to waver in the resolution you adopted with such unanimity to erect a statute in the city of Washington to this illustrious American physician.

The splendid National Medical Library and Museum, which under the auspices of the Medical Department of the Army and through the personal efforts of its distinguished curator, Dr. Billings, has been implanted in that classic ground near by the temple and museum of science, should like the latter have the effigy of its grand master to stand, as long as it shall stand, before its doors, greeting the generations of physicians and scientists, who shall visit these halls from every State of our own Union, and those who, as years pass, shall be drawn hither from foreign countries by the fame of the teachers who shall have been nurtured there. However remote that

time; however venerable this now new edifice shall have become; however lengthy the roll of great and good physicians, who during these ages shall have graced our history, the name and fame of Rush will remain undimmed and imperishable. Brother physicians of this day, we implore you each to throw his pebble on the cairn, on which shall rest a memorial of him, as imperishable as his own name, as enduring as his own fame.

All which is respectfully submitted.

ALBERT L. GIHON, M.D., Chairman.

REPORT OF THE TREASURER.

The Treasurer of the Rush Monument Committee begs leave to make this his third annual report of the financial status of the project intrusted to them by the American Medical Association.

Dr. Gihon, the Chairman of the Committee, has so ably presented the history of our efforts as well as the delay experienced in raising the necessary funds, from a wealthy and cultured profession fully sympathizing with and approving the measure, that I will not dwell upon this feature of the question. However, these delays neither prove a studied indifference on the part of our medical men nor an unwillingness on their part to contribute the necessary funds to erect the monument. The enterprise has more friends today than ever before, and the next year will, I believe, bring into the treasury more money than has thus far been raised. And simply because the work proposed has become more widely known, and every physician who is at all acquainted with the exalted character of Dr. Rush, and who loves his country and his profession, will desire to contribute his dollar to the erection of the proposed memorial.

The total amount of money that has been received by the Treasurer of your Committee is $1,119.50.

The total amount disbursed is $193.31.

Total amount remaining to the credit of the Committee in the bank of Riggs & Co. is $926.19.

The Pennsylvania State Medical Society voted $500 to the fund for the erection of the Rush Memorial Monument, to be paid $100 annually. Two hundred dollars of this appropriation has been paid and is credited in this report. The Michigan State Medical Society voted $100 to the Monument fund, which fact was mentioned in last year's report, but this contribution has not yet reached the treasury. With these amounts due, $400, and the deposit in bank, $925.19, we may confidently assert that we have available $1,325.19.

Herewith is exhibited the register which gives the names of every individual and society that has thus far contributed to the fund, with the amount given; also the bank book and the vouchers for all expenditures. Appended to the report are the names of the contributors during the last year. All of which is respectfully submitted by

J. M. TONER, Treasurer.

Adams, O. H.,[1] Vineland, N. Y.; Akins, W. T., Chicago, Ill.; Alcorn, A. W., Ravenna, O.; Allis, O. H., Philadelphia, Pa., Treasurer of Pennsylvania State Medical Society, $100; Atchison, J. B., Helena, Mont.; Atkisson, F., Ft. Benton, Mont.

Baldwin, S. C., Helena, Mont.; Barbour, G. H., Helena, Mont.; Bateman, Ephraim, Cedarville, N. J.; Battle, S. W., Asheville, N. C.; Barnett, J. R., Neenah, Wis.; Bidwell, Ed. H., Vineland, N. J.; Brooke, Edgar, Elk Horn, Mont.; Bullard, W. M., Wicks, Mont.

Campbell, Edward R., Bellows Fall, Vt.; Capron, F. P., Providence, R. I.; Carmichael, David L., Helena, Mont.; Carr, A. G., Durham, N. C.; Clark, Almon, Sheboygan, Wis.; Cole, Chas. R., Helena, Mont.; Collins, G. L., Providence, R. I.

Daly, W. H., Pittsburgh, Pa.; Dare, Charles H., Shiloh, N. J.

Eaton, F. M., Providence, R. I.; Elmer, H. W., Bridgton, N. J.; Elmer, Matthew K., Bridgton, N. J.; Elmer, William, Bridgton, N. J.

Fenn, C. M., San Diego, Cal.; Fithian, H. C., Port Norris, N. J.; Fisher, C. H., Providence, R. I.; French, S. W., Milwaukee, Wis.

Galloway, W. T., Eau Claire, Wis.; Gelsthirp, W. H., Bimini, Mont.

Hall, John H., U. S. N.; Hartman, W. B., St. Mary's, Pa.; Hasbronck, S., Providence, R. I.; Henry, F. P., Philadelphia, Pa.; Hersey, G. D., Providence, R. I.; Hoffman, Joseph H., St. Mary's, Pa.; Hoegh, K., Minneapolis, Minn.

King, S. H., Providence, R. I.; Kumpie, J. M., White Sulphur Springs, Mont.

Lathrop, J. M., Dover, O.; Lewis and Clark County Medical Association, Helena, Mont., $16.

Mackie, Wm., Milwaukee, Wis. $5; McDonald, D. McH., Helena, Mont.; McKay, D. McH., Helena, Mont.; Mitchell, J. M., Providence, R. I.; Morgan, J. R., Providence, R. I.; Musser, J. R., Rew Lodge, Mont.

Newell, T., Providence, R. I.; Newell, Wm. L., Millville, N. J.

Parberry, William, White Sulphur Springs, Mont.; Paullen, Geo. H., Shiloh, N. J.; Penney, E. W., Providence, R. I.; Pennsylvania State Medical Society, O. H. Allis, Sec'y, $100; Peck, George, U. S. N., $3; Potter, J. Barron, Bridgeton, N. J.; Peckham, F. H., Providence, R. I.; Pittman, N. J., Farborough, N. C.; Poole, B. G., Washington, D. C.; Price, Joseph, Randolph, O.

Radeke, G., Providence, R. I.; Ragan, P. J. Virginia City, Mont.; Read, J. M., Helena, Mont.; Reeve, J. T., Appleton, Wis.; Richey, S. O., Washington, D. C.; Robison, J. D., Wooster, Ohio.

Salvail, Napoleon, Helena, Mont.; Senn, Nicholas, Milwaukee, Wis., $5.; Sheppard, Joseph, Bridgeton, N. J.; Schulen, Carl, Helena, Mont.; Sligh, J. M. Helena, Mont.; Smith, S. S., Driftwood, Pa.; Smith,, Thos. J. Bridgeton, N. J.; Southerland, Carbo, U. S. A., Governor's Island, N. Y.; Smith, W. H. C., Millville. N. J.; Steel, Wm. L.,Helena, Mont.; Storer, H. R., Providence, R. I.; Strathen, Thos. E., Greenwich, N. J.; Squibb, E. H., Brooklyn, N. Y.; Sutherlin, W. K., Mansfield, La.

Tazer, A. A.,White Sulphur Springs, Mont.; Thompson, J. C. R., Bridgton, N. J.; Tomlinson, Jos., Roadstown, N. J.; Treacy, William, Helena, Mont.

Upham, E. F., West Randolph, Vt., $2.50.

Wade, John W., Millville, N. J.; Waggoner, Joseph, Ravenna, O.; Waid, Jasen T., Ridgway, Pa.; Whittaker, John, S., Millville, N. J.; Whitney, J. O.; Pawtucket, R. I., $5.; Wiley, Charles R., Vineland, N. J.; Williams, H.

[1] When not otherwise stated the amount is $1.

N., Providence, R. I.; Wilson, C. G., St. Mary's, Pa.; Wilson, S. M., Leesburg, N. J.; Wood, E. A., Pittsburgh, Pa.; Wood, Thomas, F., Wilmington, N. C.; Woodbury, F., Philadelphia, Pa.; Wynne, H. H., Helena, Mont.

A supplemental report of the treasurer of the Rush Monument Committee containing the names of contributors to the fund at the meeting of the American Medical Association in Newport, June 26, 1889, with the amount contributed by each. J. M. T.

Anderson, J. W., Nashville, Tenn., $5.

Baldy, J. M., Pa.; Ball, James T., Judson, Ind., $5; Braman, F. N., New London, Conn., $5; Briggs, W. T., Nashville, Tenn., $5.

Clark, A. P., Mass.; Collins, James, Philadelphia, Pa., $2; Comegys, C. G., Cincinnati, Ohio, $5; Connell, $5; Cullen, $1.50.

Deaver, John B., Philadelphia; Pa., $2; Douglass, George, Oxford, N. Y., $5; Dulles, C. W., Philadelphia, Pa., $5.

Earley, C. R., Ridgway, Pa., $25; Earley, F. G., Ridgway, Pa., $5; Eldridge, J. H., East Greenwich, R. I., $2; Emerson, J. E., Detroit, Mich., $2.

Fordyce, B. A., Union Springs, N. Y.; French, Geo. M., Malden, Mass.

Garcelon, Alonzo, Lewiston, Me., $10; Glynn, A. G., Attica, N. Y., $5; Gordon, S. C., Portland, Me., $5; Greenly, Ky.; Griswold, E., Sharon, Pa., $2.

Hamilton, J. B., Washington, D. C., $5; Herr, M. S., Lancaster, Pa., $5; Herrick, H. J., Cleveland, Ohio, $5; Holmes, Edward W., Philadelphia, Pa., $5; Hulshizer, Allen H., Philadelphia, Pa., $5.

Jackson, J. W., Kansas City, Mo., $5; James, Henry, Waterbury, Vt., $5; Jennings, C. G., Detroit, Mich.

Kent, J. B., Putnam, Conn., $5.

Lathrop, M. C., Dover, N. H., $5; Littlefield, H. H., Bardstown, Ill.; Love, I. N., St. Louis, Mo.; Lunsden, W. J., Elizabeth City, N. C.

McCall, Hugh, Lapeer, Mich., $5; McClellan, B. R., Xenia, Ohio; McClure, B., Dubuque, Iowa, $5; McGaffigan, A. J., Carlyle, Ill.; Mabon, Thomas, Pittsburg, Pa., $5; Minges, Geo., Dubuque, Iowa, $2; Moore, E. M., Rochester, N. Y.; Moore, R. C., Omaha, Neb.; Morton, Thomas S. K., Philadelphia, Pa., $5.

Norris, A. L., Cambridge, Mass.; Noyes, J. F., Detroit, Mich., $5; Noyes, Robt. F., Providence, R. I., $2.

Parvin, T., Philadelphia, Pa., $5; Pennell, W. W., Fredericktou, O., $5.

Quimby, I. N., Jersey City, N. J., $5.

Scott, W. J., Cleveland, Ohio, $5; Sears, J. H., Waco, Tex.; Shackford, C. H., Chelsea, Mass., $2; Smith, E. B., Providence, R. I.; Smith, E. L., Seattle, W. T.; Sothorn, J. T., Washington, D. C., $2; Stephenson, R., U. S. N., $5; Stockton, C. G., Buffalo, N. Y., $5.

Taylor, Jas. R., City N. Y., $5; Thomson, Geo. N., Boston, Mass.; Turner, H. Edward, Newport, R. I., $2.

VanWyck, R. C., Hopwell Junction, N. Y.; Vaughan, V. C., Ann Arbor, Mich., $5.

Wales, T. A , Elmira, N. Y., $5; Walker, H. O., Detroit, Mich., $5; Watson, B. A., Jersey City, N. J., $3; Whitney, J. O., Pawtucket, R. I., $5; Wyckoff, C. C., Buffalo, N. Y., $5.

UNPARALLELED LONGEVITY.—The death of the very ancient Indian known as "Old Gabriel" took place at Salinas, Cal., March 16, at the alleged age of 150. When the Franciscan missionaries reached California about a century ago, old Gabriel was then a grandfather, and they are responsible for setting down the old fellow's birth-year at 1740. He never used tobacco or alcohol and led a placid and uneventful form of existence.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, January 22, 1890.

THE PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

DR. ANDREW GRAYDON read a paper entitled

NOTES ON THE USE OF STATIC ELECTRICITY IN GENERAL PRACTICE.

(*Concluded from page 588.*)

In the matter of difference of poles I have seen pain relieved in head affections with the positive current and irritated by the negative, and *vice versa*, each patient having a rule of its own governing the application. This effect of polarity I have only seen in the above-mentioned class of ailments, not elsewhere.

We can also derive from the static induced the benefits of the faradic current, with the additional advantage of a "fixed polarity and direction, and greater electro-motor force," less pain in application, and convenience in use. Powerful muscular contractions are obtained by the spark, the effect of which blow is not limited to the immediate part subjected to it, for the reflexes are deeply and widely stirred, and, as Dr. Morton puts it, we get "simple mechanical disturbances followed by a local alteration of nutrition, and reflex action from the irritation of the peripheral distribution of nerves."

The following are the deductions I would present in concluding this paper:

1. Static electricity is a safe and reliable agent in the general practice of medicine. I do not mean to say that its reliability is of such a nature that its environments are to be neglected. For example, the office in which the instrument stands must not have any dampness about it. That state of perfection has not yet been reached that will give a static current at all times in an office so damp that the paper will not stick to its walls. A wooden case can hardly be made which will not absorb some moisture in an atmosphere like that. In placing a machine I should see that there was no wet cellar under it, if the office be on the first floor; when the room is on the second it is not so material.

2. This treatment can be applied pleasantly and with benefit to the patients, and at times when the galvanic and faradic cannot be used.

3. In "static insulation" we get results only obtainable from "general galvanization" and "general faradization," without the expense of time, trouble, and exposure—and frequently, too, after both those forms have failed.

4. In many forms of pain prompt and permanent relief follows its application, such as is unequaled by other agents.

5. As a tonic in systems overwrought, overdrawn, mental grip slipping away, it performs a very important part. The readiness with which it can be applied, and the good results obtainable, prompt me to make use of its properties frequently.

6. In various forms of headaches its effects are uniformly good. It is a common remark to hear from patients, "I can feel the pain being lifted, the heaviness going," or similar expressions indicative of appreciable relief.

7. In the treatment of insomnia the use of the douche is effective, a feeling of drowsiness making itself felt during its application.

8. In treatment about the head I have found a difference in the effect between the positive and negative poles, not elsewhere.

9. The beuefit of the faradic current is obtained from the static inducer.

10. Growth of hair, I have observed, has been promoted, and the falling out of it stopped in some of my cases of head pain.

Dr. Carpenter and Dr. Ranney both report remarkable changes in the appearance of so-called "ivory spots," or alopecia areata. Cases of eczema have also been reported by observers treated and cured by the spark.

I add the following from Dr. Ranney: "I have found heavy static sparks surpass any other form of electrical application for the relief of contracted muscles. Post-paralytic contractures, old deformities from preternaturally shortened muscles, often yield like magic to the influence of heavy sparks. I know of no other agent which exerts so marked an effect of a happy kind upon the 'lightning pain' observed in locomotor ataxia as do the heavy static sparks."

Other indications have been met successfully by this agent and reported by other observers.

Enough has been said, and more can be added, to satisfy any inquiring mind that in static electricity we have a force that has earned for itself a place in the armamentarium of the physician in his search for relief-giving agents.

NECROLOGY.

John Ball, M.D.

Dr. John Ball, formerly a resident of Brooklyn, died at Daytona, Florida, April 2, aged 72 years. He was a graduate from the New York University Medical Department in 1846. He made a specialty of ophthalmic practice during the earlier years of his residence in Brooklyn, which lasted about thirty-five years, but latterly he gave much attention to uterine surgery. During the past eight years he had relinquished city practice, spending several months each year in Florida.

DOMESTIC CORRESPONDENCE.

LETTER FROM BALTIMORE.

The Commencement Exercises of the Medical Colleges—The Medical School of the Johns Hopkins University—Prof. Osler's Clinics—Representatives to the International Medical Congress—The Governor's refusal to sign the State Medical Law—The Proposed Conference of the Medical Faculties at Nashville.

The season of medical instruction in this city is drawing to a close. Two of our medical schools have held their Commencements already, the College of Physicians and Surgeons leading off on March 18 with 72 graduates. The class at this school this winter numbered 343, the largest it has ever had and I believe the largest ever known in this city. Prof. Opie, the Dean of this school, who has been absent for several weeks in the South, recuperating from the effects of pyæmia, contracted in an operation on one of his patients, has returned to duty and was able to take part in the Commencement exercises. The new city hospital, a magnificent building erected by the Sisters of Mercy in the very heart of the city, affords abundant clinical material for this school. The Faculty have made a legal contract with the sisters by which they are to have forever the use of the patients for clinical instruction. This enables them to utilize the entire building adjoining the hospital and hitherto used for both college and hospital, for instruction alone, and they are already making arrangements to adapt it to its purpose in the fullest degree in the didactic and laboratory instruction of the large classes which they anticipate in the future. The Maternité Lying-in Hospital, and one-half the medical service at Bay View Asylum, the large city almshouse, are also under the control of the Faculty of this school. The success of this institution illustrates what can be accomplished by having a Dean of business capacity and large executive ability. The Faculty have also had the wisdom to surround themselves with competent young physicians who fill with energy and satisfaction the subordinate positions in the teaching corps. For instance, the pathologist and lecturer on legal medicine is the post-mortem physician of the city, who utilizes his large opportunities for the benefit of the school.

The Baltimore University, the latest candidate for medical-student patronage, having originated from a split in the Baltimore Medical College a few years ago, held its Commencement March 25, graduating twenty-six in a total attendance of fifty. There was also one graduate in the Veterinary School, which is under charge of Prof. Robert Ward, F.R.C.V.S. The Baltimore Medical College will hold its Commencement next week.

It has 100 students and the presumption is that it will have about fifty graduates.

The University of Maryland, as is well known, has decided upon a three-year course, preliminary examination, etc., to take effect in 1891. This has given great satisfaction to the large number of alumni of this old and venerable school. The same difficulty has been in the way of advance in this school as has deterred so many others from going forward in response to the demand of the day, viz.: the lack of endowment. A bequest has recently been made to it by an alumnus in the West, of a considerable amount, but it is not immediately available. The Commencement of this school will be held on the 16th inst. The candidates for graduation number 108, of whom it is expected eighty will pass the rather rigid requirements now in force. The attendance is not so large in the Medical School as last year—about 230, I understand. There are also flourishing law and dental classes; the latter numbering about 125, with forty-three graduates at the recent Commencement. The Dental School has, in common with the other leading schools of the country, adopted the three-year course.

An interesting episode took place at the close of the lectures in the School of Medicine. Professor George W. Mittenberger took final leave of the class and of the school. He has completed his half century in the service of the school, and now consummates a determination which he has desired to carry out for several years, to resign his professorship. His connection with the school began in 1837, when he became a student. On his graduation in 1840, he was appointed Demonstrator of Anatomy, in 1852 Professor of Materia Medica, and in 1858 Professor of Obstetrics. He is a model accoucheur. He was much affected in saying farewell to the scene of his long labors, and made a very touching address. The students are getting up a memorial in his honor. It is expected that Professor Michael, who now holds the chair of Anatomy, will succeed him. Laboratory instruction will shortly be made compulsory in this school, and arrangements are being made for the erection of buildings in the University grounds for such use.

The Woman's Medical College closes lectures on the 12th. Examinations will occur for the remainder of the month, and the Commencement will be held May 1. This school has a severe course of study. There are twenty students in attendance this year and seven candidates for graduation. The hospital of the Good Samaritan, with twenty-five beds, is under the control of this school.

As is well known, the medical school of the Johns Hopkins University has not yet been organized. The school is attached to the university, and owing to the failure of the Baltimore and Ohio Railroad, in which its securities are chiefly invested, and the financial difficulties consequent thereon, the University has not the funds, at present, to start the school. It is very uncertain when it will have them, and, therefore, it may be many years before the school will be put in operation. The hospital, which has its own special bequest of three and a half millions or thereabouts invested in other securities, does not share in this embarrassment, and work is progressing there steadily and satisfactorily. Several special courses have been delivered upon various subjects during the winter by the medical staff, and the clinics are open to the profession and are largely availed of, especially those of Professor Kelly. There are a large number of internes residing in the hospital, chiefly graduates of the University of Maryland.

Professor Osler has many interesting cases at his clinics. He is struck with the comparatively large number of cases of aortic aneurism with which he meets. In the course of a few months he has had no less than nineteen. His methods are very exhaustive and the microscope is in constant use, especially in the diagnosis of obscure fevers. Among the interesting cases exhibited were one of bilateral athetosis in a man æt. 24, who was yet able to earn his livelihood by using the pick, and one of cross-legged progression, the result of infantile cerebral paraplegia, in a woman aged 39. A few days ago he exhibited the amœba which is believed to be the cause of dysentery. Professor Kelly constantly performs laparotomy, and in cases which would be refused by our other local abdominal surgeons. His assistant informed me, some weeks ago, that he had operated about forty-five times in four months, with three deaths, one due to septicæmia. His success in Cæsarean section has been remarkable.

By the way, it is reported upon good authority that Professor Osler is shortly to be married to one of the ladies connected with the Training School for Nurses at the hospital. I may mention also that this training school is in a very flourishing condition, with a large number of students in attendance, and a long and most elaborate course of instruction, given by the principal members of the staff. Professors Osler and Welch will represent the hospital at the Berlin International Congress in August.

Our hopes of at last having a medical law for the regulation of practice in this State have been dashed to the ground by the refusal of Governor Jackson to sign the law passed by the late Legislature, and a copy of which is published in the last week's *Maryland Medical Journal*. He bases his objections on the ground that it is unjust. It provided for twelve examiners, seven regular and five homœopathic, for examination of all those who should commence practice in the State after its passage, regardless of the schools from which they graduated. In the beginning the homœ-

opathists were allowed three of the twelve members of the Board, which was a sufficient allowance, as they number only sixty in the State, to 2,000 regular physicians; but rather than jeopardize the law the number was increased to five. On the whole the law was a good one, and we were congratulating ourselves on its passage by both branches of the Legislature, when the announcement of the Governor's action fell like a pall upon all our hopes and aspirations. Politics, I fear, is at the bottom of his action, although some of the schools opposed it strongly. Prof. Michael, of the University of Maryland, fought hard for it, so that it was said the members of the Legislature suspected that *it might be a measure in the interest of his school.* Professor Ashby also deserves credit for his good work in connection with it. We yet hope that the Governor may be induced to change his views. If this bill fails, we are in a very hopeless condition, for it is not likely that those will be again soon found who will give up as much time and expense to the work as Professors Michael, Ashby and his colleagues.

The proposed conference of Medical Faculties at Nashville, in May, which originated, as you know, here, has met with very general notice and approval in the medical press, and favorable response from a number of the schools. It was at first intended only to stir up our own colleges here to take a forward step, but the Faculties argued why take such a suicidal step as that, and what would it advantage the cause of medical education if the Baltimore schools committed self-destruction. So it was decided as not feasible to do anything unless a large number of schools through the country joined in the movement. A proposition then came from the Faculty of the College of Physicians and Surgeons to call a national convention and make the movement a national one. A mistake has been made in supposing that the subjects mentioned in the circular to the medical schools represent the final action of the Conference. They are only suggestions upon which it was thought desirable that the delegates should be able to announce the views of their Faculties, in order that something definite might be decided. Of course, no one knows in advance what will be the decision of the Conference. In any event the measures mentioned in the circular can only be considered as representing the minimum of requirements in the new régime. Another point: it is in the highest degree desirable that *all* the schools should participate in the Conference, whether they are three year schools or not. For not only can they bring their influence to bear in securing urgently needed improvements, but we need uniformity in what is to be done. I mean that a school may have a three-year course, but it may fail to enforce a preliminary examination, or a laboratory course, or *vice versa.* Therefore there is great responsibility resting upon those teachers and schools who hold aloof in this reform movement, when their aid and influence might be productive of such good to the profession and the cause of medical education. E. F. C.

April 10, 1890.

BOOK REVIEWS.

HANDBOOK OF MATERIA MEDICA, PHARMACY, AND THERAPEUTICS. By SAMUEL O. L. POTTER, M.A., M.D., Professor of the Theory and Practice of Medicine, Cooper Medical College, San Francisco; Author of Quiz Compends of Anatomy and Materia Medica, etc. Second Edition. Philadelphia: P. Blakiston, Son & Co. 1890.

Dr. Potter has embodied many original ideas in the preparation of this work, some if not all of which will prove of very great value to the reader. After an ample introduction to his subject, about one-half of the entire volume is devoted to the subject of materia medica and therapeutics. A peculiarity of arrangement is here noted, for the author, instead of following the classification of remedies laid down in the introduction, has arranged his subject in alphabetical order, as best adapted for the grouping of closely related agents under the title of the principal member of each class; a method, no doubt, which will in many respects prove advantageous to the novice. In this section every preparation included in the last U. S. Pharmacopœia is fully noticed, together with the prominent unofficinal agents. The physiological action, incompatibilities and therapeutical application of each remedy is described clearly and concisely.

The second portion of the book, comprising about 57 pages, forms a very valuable feature of the work. It is devoted to pharmacy, the author's idea being that young practitioners could in many instances advantageously dispense their own medicines, and that all physicians should be well informed as regards the principles of pharmacy.

The third part of the work is occupied with special therapeutics in the form of an alphabetically arranged index to the treatment of diseases as recommended by various authorities, all of whom are specifically mentioned by the conscientious author. The plan of this chapter might be objected to by some as an ill-advised way of reaching a desired end, but we believe that it will commend itself to many a junior practitioner—for whose needs, indeed, the author has prepared his entire work.

An appendix of considerable length contains a variety of useful information of the general character of that found in many physicians' visiting

lists, and contains in addition instructions in prescription writing, supplementary to others found in the department of pharmacy.

The many and important additious to and changes in our materia medica have led to a great influx of new works and new editions of the older ones, among which we believe that the present one is destined to occupy a high place of favor.

Medical and Surgical Memoirs. Containing Investigations on the Geographical Distribution, Causes, Nature, Relations and Treatment of Various Diseases, 1855–1890. By Joseph Jones, M.D., Prof. of Chem. and Clin. Med., Tulane Univ. of La.; Visiting Physician of Charity Hospital; Pres. of the Board of Health of the State of La., etc. Vol. iii, (in two parts). Illustrated by Plates, Maps, Charts, Tables and Engravings. Pp. 1540. New Orleans: Jos. Jones, M.D,, 156 Washington Ave. 1890.

It is necessary to see this enormous array of facts in order to form the most superficial impression of the character and extent of the work done by the author. The work is of a cyclopædic character, and offers a whole mine of information to the reader. Nearly all of the topics considered relate to the general subject of State Medicine, a department in regard to which the writer is abundantly able to speak authoritatively. In Part I the subject of quarantine in Louisiana is discussed particularly in reference to yellow fever and small-pox; the history, methods of operations, and results secured in the preservation of life and protection of commerce are fully set forth; much space is devoted to a consideration of the vital statistics of the State of Louisiana and the city of New Orleans. In this connection the writer is able to present a great many facts of the highest interest and importance, particularly in regard to the city which has so often been ravaged by pestilence. Several hundred pages are occupied with the history and practical application of vaccination, including the original papers by Jenner and his colleagues. This is one of the most prominent features of the volume and one which deserves a careful perusal; these papers are illustrated by reproductions of Jenner's original plates.

Part II contains monographs relating to medical education, teratology, nervous diseases, insanity, public and international hygiene, progress of the discovery of disinfectants and their application to the arrest of contagion, and a history of maratime hygiene as applied by the great naval powers.

One cannot too highly praise the indefatigable industry which is shown in the accumulation and publication of the observations of a life time. The department of State Medicine is rapidly assuming the importance which it deserves, and books of this character may well occupy the careful attention of all who are interested with the duties of public sanitation both at home and abroad.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. London: Longmans, Green & Co., Paternoster Row, 1889. Pp. 457.

Few medical societies can show such admirable work as that of the Medical and Chirurgical Society. The present volume is one of very great interest. It contains twenty-four papers nearly equally divided between medicine and surgery. All of these are of far more than ordinary interest and many of them are beautifully illustrated —furthermore there is hardly a paper in the volume that does not represent a large amount of personal observation and experience, and not one that does not deal with subjects alive with interest to the physician and surgeon.

As an indication of the character of the Transactions the titles of a few of the papers are mentioned: Acetonuria and its Relations to Diabetic Coma, by Samuel West, M.D.; On the Relations of Chorea and Rheumatism, by A. E. Garrod, M.D.; On a Case of Actinomycosis, by R. D. Powell, R. J. Godlee, *et al*; On the Clinical Significances of Clay Colored Stools, etc., by T. J. Walker, M.D.; Twenty-five Cases of Nephrectomy by Abdominal Section, by J. K. Thornton, M.B.; A Case of Gastro-Enterostomy, together with a Table of the Cases hitherto reported, by H. W. Page, M.C. The last mentioned paper is remarkable for the superior excellence of its illustrations.

The Physician's Leisure Library. Diabetes. By A. H. Smith, M.D., Professor of Clinical Medicine and Therapeutics New York Post Graduate Medical School; Physician to the Presbyterian Hospital, etc. Detroit, Mich.: George S. Davis, 1889. Pp. 74.

This brochure is the result of a successful attempt to give the reader the practical points in relation to the disease under consideration. The subject is treated in a concise and able manner.

A Handbook of Obstetrical Nursing, for Nurses, Students and Mothers. By Anna M. Fullerton, M.D., Demonstrator of Obstetrics in the Woman's Medical College of Pennsylvania; Physician, Obstetrician and Gynecologist to the Woman's Hospital of Philadelphia, etc. Philadelphia: P. Blakiston, Son & Co., 1890. Pp. 214. Price $1.25.

This little work comprises the course of instruction in obstetrical nursing given to the pupils of the Training School for Nurses in the Woman's Hospital of Philadelphia. Its object has been very commendably carried out and it furnishes full, complete and trustworthy instruction in this

branch of nursing. No class of patients requires more careful and skilful nursing than lying-in women, and the change from the old fashioned, ignorant midwife to the modern intelligent obstetrical nurse is a notable indication of enlightenment in these days. Nurses, and physicians too, will find this book an extremely suggestive and useful one.

MISCELLANY.

Health in Michigan.—For the month of March, 1890, compared with the preceding month, the reports indicate that cholera infantum increased, and that typho-malarial fever, cholera morbus, inflammation of brain, diphtheria and puerperal fever decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity and relative humidity were less, and the day and night ozone were more.

Compared with the average for the month of March in the four years 1886–1889, inflammation of kidney, influenza and cerebro-spinal meningitis were more prevalent, and typho-malarial fever, puerperal fever, diphtheria, typhoid fever, inflammation of brain, cholera morbus, scarlet fever, dysentery and intermittent fever were less prevalent in March, 1890.

For the month of March, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was lower, the absolute humidity and relative humidity were less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of March, 1890, at 61 places, scarlet fever at 70 places, typhoid fever at 25 places, measles at 111 places, and small-pox at 1 place.

Reports from all sources show diphtheria reported at 3 places more, scarlet fever at 7 places less, typhoid fever at 9 places less, measles at 42 places more, and small-pox at 1 place less in the month of March, 1890, than in the preceding month.

LETTERS RECEIVED.

Dr. Seaton Norman, Evansville, Ind.; The Wilmington Dental Mfg. Co., Philadelphia; Dr. F. H. Bosworth, New York; Dr. S. B. Craver, Bryan, Ohio; Rio Chemical Co., St. Louis, Mo.; J. H. Bates, New York; Dr. A. L. Hummel, Philadelphia; Dr. G. W. Davis, San Francisco, Cal.; La Gazette Médicale, Montreal, Can.; Dr. C. O. Cooley, Madelia, Minn.; Medical and Surgical Sanitarium, Battle Creek, Mich.; Dr. J. A. Scroggs, Keokuk, Ia.; Horlick's Food Co., Racine, Wis.; Dr. A. R. Bowen, Maquoketa, Ia.; Dr. H. L. Getz, Marshalltown, Ia.; Dr. S. J. Radcliffe, Washington; Dr. E. F. Walker, Providence, R. I.; J. P. C. Lewis, Catskill, N. Y.; Dr. Kennroth, Blairstown, N. J.; Dr. J. H. Kellogg, Battle Creek, Mich.; Dr. Joseph Eastman, Indianapolis, Ind.; Parisian Specialty Co., New York; Dr. William B. Atkinson, Philadelphia, Pa.; Dr. Wm. H. Morrison, Holmsburg, Philadelphia, Pa.; Dr. M. D. Hull, Arrowsmith, Ill.; Dr. R. T. Yoe, Louisville, Ky.; Dr. G. E. Humphrey, Galveston, Tex.; Doliber Goodale Co., Boston, Mass.; Dr. Jay H. Radley, New York; Dr. Eugene S. Talbot, Chicago; Dr. Bourneville, Paris, France; Dr. C. C. Copeland, North Madison, Ind.; Thos. Cook & Son, New York; The Upjohn Pill & Granule Co., Kalamazoo, Mich.; Lea Brothers & Co., Philadelphia, Pa.; Dr. W. S. Watson, Matteauwan, New York; Dr. C. B. Porter, Boston, Mass.; Dr. E. C. Kenny, Norwich, Conn.; A. H. Roffe & Co., Boston, Mass.; The Subscription News Co., Chicago; Medical Press Agency, London, Eng.; St. Joseph Medical Herald, St. Joseph, Mo.; The Ale & Beef Co., Cincinnati, O.; The Charles H. Phillips Chemical Co., New York; E. Steiger & Co., New York; T. W. Hannaford, London, Eng.; Johnson & Johnson, New York; F. O. Beckett, Washington; J. M. Ceballos & Co., New York; Dr. J. Abbott Cantrell, Philadelphia; W. H. Schieffelin & Co., New York; P. C. Lewis, Catskill, N. Y.; Dr. Wm. Pepper, Philadelphia; Parke, Davis & Co., Detroit, Mich.; Soden Mineral Springs Co., New York; Dr. Chas. E. Rogers, Minneapolis, Minn.; Dr. Albert Stifel, Wheeling, W. Va.; Dr. J. S. Philips, Allegheny, Pa.; Horlick's Food Co., Racine, Wis.; The Imperial Granum Co., New Haven, Conn.; The Addressing, Duplicating & Mailing Co., New York; Dr. G. A. White, Sacramento, Cal.; University of Pennsylvania, Philadelphia, Pa.; Dr. Wm. B. Atkinson, Philadelphia, Pa.; Wm. R. Warner & Co., Philadelphia, Pa.; Dr. M. T. Zellers, Hooper, Neb.; Dr. J. Trush, Cincinnati, O.; Geo. S. Davis, Detroit, Mich.; The Antikamnia Chemical Co., St. Louis, Mo.; Le Progrès Médicale, Paris, France; Dr. Theo. Griffin, Baxter Springs, Kan.; Dr. G. W. Gallagher, New Haven, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 12, 1890, to April 18, 1890.

By direction of the Secretary of War, the following changes of stations of officers of the Medical Department are ordered:

Major John V. Lauderdale, Surgeon, from Ft. Davis, Tex., to Ft. Ontario, N. Y.

Capt. John O. Skinner, Asst. Surgeon, from Ft. Ontario, N. Y., to Ft. Davis, Tex.

Capt. H. O. Perley, Asst. Surgeon, from Ft. Wayne, Mich., to Ft. Mason, Cal.

Capt. H. G. Burton, Asst. Surgeon, from David's Island, N. Y., to Vancouver Bks., W. T.

Capt. Wm. E. Hopkins, Asst. Surgeon, from Ft. Mason, Cal., to Ft. Columbus, New York Harbor.

Capt. Wm. Stevenson, Asst. Surgeon, from Ft. Verde, Ariz., to David's Island, N. Y.

First Lieut. Charles Willcox, from Ft. Columbus, New York Harbor, to Ft. Bowie, Ariz. Par. 2, S. O. 83, A. G. O., April 9, 1890.

Lieut.-Col. Joseph C. Baily, Asst. Medical Purveyor, is granted leave of absence for two months on surgeon's certificate of disability, with authority for his admission to the Army and Navy General Hospital, Hot Springs, Ark., for treatment therein, by direction of the Secretary of War. Par. 10, S. O. 85, A. G. O., April 11, 1890.

By direction of the Secretary of War, Capt. Paul R. Brown, Asst. Surgeon, now at the Army and Navy General Hospital, Hot Springs, Ark., is relieved from station at Ft. Thomas, Ariz., and will report in person to the commanding officer, Little Rock Bks., Ark., for duty at that post, reporting by letter to the commanding General, Dept. of the Missouri. Par. 3, S. O. 84, A. G. O., April 10, 1890.

Major Passmore Middleton, Asst. Surgeon (St. Francis' Bks., Fla.), is hereby granted leave of absence for three months, on surgeon's certificate of disability. Par. 1, S. O. 85, Hdqrs. Div. of the Atlantic, April 12, 1890.

By direction of the Secretary of War, so much of par. 2, S. O. 83, A. G. O., April 9, 1890, from this office, as directs the transfer of Capt. William Stephenson, Asst. Surgeon, from Ft. Verde, Ariz., to David's Island, N. Y., is so amended as to substitute the words Columbus Bks., O., in place of David's Island. Par. 1, S. O. 89, A. G. O., Washington, April 16, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 19, 1890.

P. A. Surgeon H. G. Beyer, ordered to the U. S. S. "Yantic."

P. A. Surgeon Rufus H. McCarty, died April 12 with pneumonia, on the U. S. S. "Yantic," at Key West, Fla.

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ORIGINAL ARTICLES.

RADICAL CURE OF INGUINAL AND FEMORAL HERNIA.

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The object of this paper on the radical cure of inguinal and femoral hernia is to place on record the few cases it has been my good fortune to have operated upon; to speak of some of the complications we are apt to meet with in the course of the operation; to provoke a discussion on these by which we are able to learn the views of experienced surgeons who probably have had more experience with this operation than myself; also to learn their mode of operating and their criticism of the operation. The greater number of operations I have done have been for reducible hernia. At the present status of surgical science, the question of the radical cure in cases of operation for strangulated hernia, I think by the majority of operators at least, would receive a careful consideration, and only in the event that the patient's condition would not permit of further manipulation, would the operation be completed, as it was formerly done without attempting the radical cure. The operation for the radical cure of hernia has been until recently confined largely to the inguinal variety, but now is being practiced upon femoral, in fact upon all varieties of hernia.

The different operations from which we can select are Macewen's, Barker's, Banks', McBurney's, and others. Macewen's operation consists, as you well know, of exposing and freeing the entire sac when, with the contents reduced, the sac not having been opened, it is puckered up and reposited in the abdomen. The manner of closing the canal by Macewen is quite ingenious; the conjoined tendon is penetrated in two places by the threaded hernia needle—first from without inwards near the lower border of the tendon, and second from within outwards as high as possible on the inner aspect of the canal. One single thread is withdrawn from the point of the needle and the needle, with the other extremity of the thread, is removed, the loop presenting upon the abdominal aspect of the tendon. That portion of the stitch which comes from the lower border of the tendon is threaded by a second needle and, guided by the index finger placed in the inguinal canal, is introduced from within outwards on a level with the lower stitch in the tendon through Poupart's ligament and the aponeurotic structures of the transversalis, internal and external oblique muscles. The needle is now freed from the thread and withdrawn and again threaded with the suture which protrudes from the upper border of the tendon when it is introduced from within outwards, on a level with the upper stitch in the tendon, through the transversalis, the external and internal oblique muscles. It is then freed from the thread and withdrawn. The same stitch may be introduced lower down the canal if thought desirable, when the ends of the respective sutures are drawn tightly together and tied. Macewen also brings together the pillars of the external ring.

Barker's method consists in exposing and freeing the neck of the sac in the inguinal canal, opening it some little distance to the distal side of the upper end of the canal, seeing that all the contents are reduced, tying it off to the proximal side of the opening made in it, and dividing it below the ligature, using the stump to occlude the internal ring. The walls of the canal are brought together by interrupted sutures at a distance of ¼ inch apart, passed from within outwards and appear upon the surface of the external oblique aponeurosis, care being taken not to include the spermatic duct. These sutures, when tied, are cut off short and allowed to remain. The skin and superficial fascia are brought together by interrupted sutures.

Ball's method consists in exposing and isolating the sac, grasping its neck after the contents have been reduced (opening the sac if necessary to complete the reduction) with the broad catch forceps, and gradually twisting it until it is quite tight; then a stout catgut ligature is passed round the twisted sac as high up as possible, tied tightly and the ends cut off short. The next step is to pass two sutures of aseptic silk through the skin at a distance of about an inch from the outer mar-

gin of the wound, through the outer pillar of the ring and the twisted sac in front of the catgut suture, then through the inner pillar of the ring and skin upon the inside; the sac is now cut off in front of the sutures, they preventing it from untwisting. By this operation it is claimed that there is no resulting depression at the internal abdominal ring, but on the contrary, that the peritoneum is more prominent here than elsewhere in the immediate neighborhood, the peritoneum around the site of the internal ring being thrown into a number of radiating folds. Dr. Ball reports a case on which he operated for a very large right inguinal hernia and in which there was an incomplete inguinal hernia (bubonocele) upon the left side, where the latter hernia was cured by twisting the hernial sac of the side operated upon.

Banks' method consists in exposing and freeing the entire sac, opening it to make sure that all its contents are reduced. The sac is then pulled well down, tied up as high in the canal as possible before removing it. The next step consists in bringing the pillars of the ring together by two or three silver wire sutures which are left in position.

McBurney's method consists in exposing and freeing the sac throughout, when it is securely tied with a stout catgut or silk ligature at the internal ring, the sac being always opened to demonstrate that no portion of its contents remain unreduced, also to enable the operator to insert one or two fingers through the neck and a little way into the peritoneal cavity. This is done to positively guard against the return of a piece of the intestine or omentum into the sac during the application of the ligature. The ligature is tightened on the operator's finger and tied very tightly as the finger is withdrawn, leaving a pedicle of sufficient length to prevent slipping of the ligature; the rest of the sac is cut away. In preparing the wound for packing, from four to eight stout silk or catgut sutures according to the size of the wound are passed through the tissues which form the upper wall of the wound, namely: the conjoined tendon, the aponeurosis of the external oblique including the inner pillar of the external ring, and the superficial fascia and skin, the skin being carefully and deeply inverted while each stitch is tied tightly. The same number of sutures is passed through the tissues forming the lower wall of the canal, namely: the skin, the superficial fascia, and Poupart's ligament including at the lower part the outer pillar of the external ring; these are also tied tightly, exercising the same care to invert the skin. The object of these sutures is to positively secure patency of the wound for the formation of granulations from the bottom. Next, to lessen the width of the wound, two or more heavy stitches are carried across it, passed deeply through the skin and superficial fascia, these latter relieving the tension on the edge sutures so that they do not cut their way out too soon. The two last or tension sutures are tied over pledgets of iodoform gauze to avoid ulceration. The wound is now carefully irrigated, dusted with iodoform throughout and firmly packed with iodoform gauze. The portion of the wound beyond the canal is sewed up without packing, catgut or other drainage being inserted at the lower end if required. The packing of the wound after having lessened its width by the introduction of the tension sutures secures firm union, both from below upwards and from above downwards. By this union we obtain a firm cicatrix which offers the best possible barrier to the return of the rupture. By forcing the packing well up into the angle of the wound we have a condition of the peritoneum at and around the site of the internal ring the least favorable for the return of the hernia.

The operation which I have always performed with one exception, has been that of Barker, modified only in the introduction of the sutures (after the manner of Macewen) for closing the canal, and is as follows: Having exposed the sac throughout the inguinal canal it is carefully separated from the spermatic cord and the transversalis fascia, the dissection being carried well up to the margin of the internal ring, when a long aseptic silk ligature is passed beneath it a short distance from the ring. The sac is now opened, thus enabling me to see whether its contents are entirely reduced after applying taxis, and finally to complete the reduction by separating any adhesions that may exist between the contents of the sac or the contents themselves. If the sac contains omentum which is irreducible from the presence of adhesions, after having separated these I tie the omentum off with catgut ligatures and cut it away, returning the stump to the abdomen. After having completed the reduction of the contents I tie the ligature, which is placed beneath the neck of the sac, as high up as I possibly can. I now thread two large staphylorrhaphy needles, which I have had made especially for this purpose, with either end of the ligature and transfix the abdominal walls from within outwards, above and to either side of the position of the internal ring, including only, of course, part of the transversalis fascia, the transversalis and internal oblique muscles and the aponeurosis of the external oblique muscle. The ligatures now present upon the upper surface of the aponeurosis of the external oblique, upon which they are tied down firmly and cut off short, the stump of the sac occupying the site of the internal ring. The remainder of the operation consists in stitching the walls of the canal together, first transfixing the lower edge of the conjoined tendon with two long straight needles from below upwards, threaded at either end of a single aseptic silk lig-

ature, care being taken to avoid the deep epigastric artery, the index finger being used to locate and protect the artery, at the same time to raise the lower edge of the tendon. The needles are carried across the canal and made to transfix Poupart's ligament on a level with the points of penetration of the conjoined tendon. Two or more of these deep sutures are usually required, this depending upon the length of the canal. The sutures are tied down upon the outer surface of the ligament and cut off close (in tying these sutures care should be taken not to make too great pressure upon the cord). Interrupted sutures (aseptic silk) are now introduced to complete the closure of the wound, those approximating the sides of the wound as far as the conjoined tendon, taking in above the skin, the superficial fascia, the aponeurosis of the external oblique, the internal oblique and transversalis muscles where these latter have been divided in exposing the internal ring, and the arching fibres of the internal oblique and transversalis muscle; below the skin, the superficial fascia and the aponeurosis of the external oblique muscle immediately above Poupart's ligament. Those at the extreme lower part of the wound including the skin, the superficial fascia and the aponeurosis of the external oblique upon either side. For drainage I use simply a few strands of chromicised catgut placed beneath the superficial set of sutures. The wound is dressed antiseptically, antiseptic precautions being carried out throughout the entire operation. From the time of opening the sac until it is tied and divided I suspend the use of the bichloride for irrigation, substituting hot distilled water. The superficial sutures only are removed. The patient is kept in bed for six weeks, when he or she is permitted to get up and go around without a truss. In dealing with the sac this operation is like that of Mr. Barker, but differs from Macewen's, Ball's, and McBurney's in that the fundus of the sac is not disturbed. In closing the canal it is very much like that of Macewen. My objection to exposing and freeing the entire sac, is the injury to which the surrounding parts, particularly the testicle, are exposed in the necessary handling which must be called for in the tedious dissection for the dislodgement of the sac, in many cases at least. The latter I think constitutes a very grave objection. I have seen one case of suppurative orchitis follow this procedure. It prolongs the operation and makes it more difficult. The advantage in opening the sac is to satisfy ourselves that its contents are all reduced, also not to return any of the contents to the abdominal cavity in a condition that could favor internal strangulation. Not to open the sac, even if the contents have seemed to have been entirely reduced, I look upon as a dangerous and unwise course to take, particularly as with the advantages of aseptic surgery we are not exposing our patients to any additional risk. By this latter means we cannot be certain that we have completely reduced all the

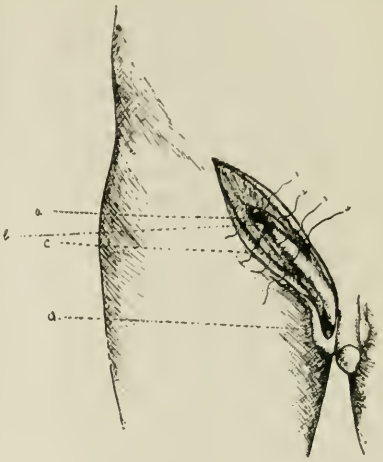


FIGURE 1.—Deaver's Hernial Operation, showing primary and secondary incisions. a, sac of hernia cut and retracted into internal ring, anchored by deep suture 1; b, spermatic cord, etc.; c, sac of hernia, divided from peritoneal portion and lying in the exposed inguinal canal; d, testicle. 1, 2, 3, 4, deep sutures in the divided coverings of inguinal canal. (Drawn by Allen J. Smith, M.D., of Philadelphia.

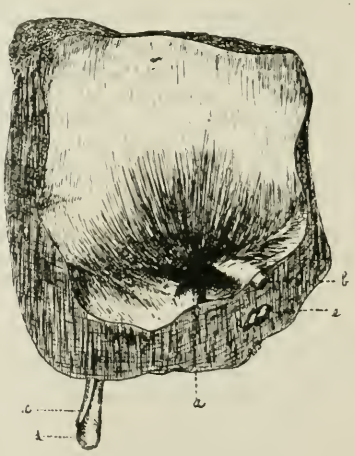


FIGURE 2.—Deaver's Hernial Operation (peritoneal surface). a, point of retraction of sac at internal ring; b, spermatic cord, etc.; c, sac of hernia; d, testicle; e, femoral vessels. (Drawn by Allen J. Smith, M.D., of Philadelphia.)

contents, having to rely upon our sense of touch, which we must admit is not nearly so reliable as when we have inspected the interior of the sac.

The presence of the sac in the lower part of the canal acts as a plug, it being reinforced by the products of inflammation necessary for the repair of the wound, therefore I consider that the sac when left in the canal offers a better result, both where the sides are brought into apposition by deep and superficial sutures, also when the canal is packed. Mr. Macewen believes that the sac when left acts as a plug, and tends to widen instead of obliterating the canal, and thus prevents the pillars of the external abdominal ring from coming in direct apposition. It is not the efforts we spend upon the lower part of the canal that prevents the return of the hernia, but upon the sac and the upper portion, where we bring in apposition muscular tissue, as well as the skin and fascia, between which we expect firm union. Does the fundus of the sac when left undisturbed undergo inflammation to the extent of producing suppuration? It may. I have had this to occur in one case; here I think it proved to be rather an advantage than otherwise, a firmer cicatrix being left. Considering the question of support at the expiration of the time when the patient is able to get up I have always thought it better, and it has been my practice not to use any. The presence of a compress or truss must excite more or less absorption, thus weakening the parts.

The question of attempting a radical cure of hernia depends on the following points as mentioned by Barker: First, whether the procedures employed are devoid of risk; second, whether they are simple, easy of execution, and capable of wide application; third, whether they fulfil the objects for which they are designed.

What class of cases render the operation for the radical cure justifiable: first, those in which the hernia is complete and the external ring is so large as to make it difficult, if not impossible to apply a truss that will hold the rupture; second, where the hernia is irreducible, this being a form in which it is difficult to obtain a truss to fit accurately enough to prevent the escape of a new portion of the gut, thus exposing the subject to the constant risk of strangulation. In this latter form of hernia the hernial orifice cannot well be other than always more or less patulous. In all cases a hernia is a grave infirmity and exposes the patient to constant danger. This danger, however, providing the hernia can be properly retained by a truss is comparatively slight, if proper care be given to the management of the truss. The inconvenience of an ordinary reducible hernia is that it prevents the subject from taking part in athletic sports; it is also a bar to his entrance into public service without incurring a certain amount of risk. The age of the patient and the size of the hernia should also influence us in deciding upon the radical cure. If the patient is past seventy years, and unless he be of a remarkable physique, with good heart and kidneys, I think it injudicious to advise any interference. Where the hernia is a very old and large one, the abdominal cavity must necessarily have contracted more or less, and, as a consequence, the sudden return of the contents of such a hernia might in itself prove serious. In cases of this character, I would think it well to have the patient in bed some days before the operation with the hernia reduced and retained by means of a large pad and bandages, thus educating the abdominal cavity to the presence of this additional mass and thereby lessening the shock of the operation and favoring an uncomplicated recovery. Patients who suffer from chronic bronchitis, also those who have large flat and flabby belly walls, particularly if advanced in life, are not favorable cases for this operation. In performing the radical cure where the hernia is of the congenital variety we can dispose of the sac in one of two ways; the first is to do as I did in one of the cases I have reported (the way also recommended by Macewen) to divide the sac across in the canal taking care to preserve the spermatic cord, then splitting it longitudinally and behind when the upper portion can be either tied or sutured and the lower portion closed by suturing, thus making a new tunica vaginalis for the testicle. Another way to dispose of it is after opening the sac, to remove the testicle, when it can be treated in the same manner as the sac in acquired hernia.

Case 1. Congenital Hernia.—April 20, 1887, I was asked to see J. A., aged 33 years, a patient in the medical wards of the Philadelphia Hospital, who was suffering from a painful scrotal tumor of the right side which upon examination proved to be a strangulated inguinal hernia. I advised operation but the patient would not consent to this until the following day, when he was transferred to my wards, hurriedly prepared, ether was administered and I proceeded to relieve the strangulation. The sac was exposed throughout and opened, when the hernia was found to be of the congenital variety. The constriction which was in the neck of the sac was relieved and the contents reduced. I disposed of the sac in the following manner: I divided it across in the canal, taking care to preserve the cord. The upper portion I split behind longitudinally, thus allowing me to push the cord out of the way when with a strong catgut ligature passed around I tied it off, in this manner closing the peritoneal cavity; the edges of the lower portion were approximated by a continuous catgut suture, making a new tunica vaginalis. The sides of the canal were brought together by two sets of interrupted catgut sutures, the first, and deep set passing through the aponeurotic and muscular tissue down to the floor of the canal, the transversalis fascia, and the superficial set passing through the skin and fascia. Catgut drain was introduced

into the bottom of the scrotal wound, the sides and edges brought together by interrupted catgut sutures. The patient made an uninterupted recovery; was kept in bed six weeks.

Case 2.—Aug. 4, 1887, I operated on Mrs. M. for my friend Dr. E. H. Steer. She was suffering from a strangulated femoral hernia of the right side. The sac was exposed and separated throughout after a careful and somewhat tedious dissection; when the sac was opened the contents were found to consist of omentum and small intestine. The former was strongly attached to the wall of the sac by old adhesions; the bowel was free elsewhere except at the neck of the sac, the seat of the constriction, and very dark in color. I next introduced a hernia knife between the neck of the sac and Hey's ligament the seat of the constriction, dividing the latter; this permitted me to draw out the small intestine until I exposed healthy gut. The discolored intestine was treated with a hot towel while I proceeded to separate the omentum, tying it off with catgut ligatures and cutting away all that portion presenting within the sac; this I accomplished with but little trouble. The stump of omentum was returned to the abdominal cavity after which the small intestine having recovered itself, was likewise returned; the neck of the sac was tied with a strong catgut ligature, close up to the femoral ring and cut away. Either end of the ligature surrounding the neck of the sac was threaded with a curved needle; the needle carrying the inner thread was passed from within outwards through Gimbernat's ligament, and the one carrying the outer thread passed in the same direction through the upper and outer margin (the superior falciform process) of the saphenous opening; the ligatures were drawn out from the needles and tied securely, in this way engaging the stump of the sac within the femoral ring. Catgut drainage was introduced into the bottom of the wound, the divided cribriform fascia brought together with interrupted catgut sutures, also the skin and the superficial layer of the superficial fascia. Wound was dressed antiseptically.

Case 3.—C. R., aged 39 years, was admitted to my wards in the Philadelphia Hospital with a double complete reducible inguinal hernia. The patient was not able to keep the herniæ up with a truss, having tried various kinds. I advised the radical cure, to which he gladly consented. Having been thoroughly prepared, June 26 I performed Barker's operation upon the left hernia only, with the modification of the introduction of the sutures for bringing together the walls of the canal which I have described. The very much thickened sac as I supposed, was exposed throughout the inguinal canal. I opened the sac a short distance below the internal abdominal ring, finding its contents to be intestine and omentum, both of which were adherent at points to the inner surface of the sac. The adhesions were carefully tied with catgut and separated, when I was able to complete the reduction. The next step was the passing of the ligature beneath the neck of the sac to the proximal side of the opening made in it. In making traction upon the sac in order to tie up as close to the internal ring as possible, I was especially struck with the thickness of the outer wall. This I examined very carefully and could not satisfy myself that it was anything else than the sac, therefore I proceeded to tie the ligature and divide it, when I found I had tied off and divided a double sac. I completed the operation in the usual way. Not feeling satisfied with my work I paid a visit to the hospital in the evening, when I learned that the patient was having a great deal of pain referred to the region of the bladder and a frequent desire to urinate, but with inability to pass urine; was very restless, and had an anxious expression. My resident physician, Dr. Preston, told me he had passed the catheter but was not able to draw off any urine. I passed a soft rubber catheter into the bladder, introducing my finger into the rectum to make sure it had entered the bladder. No urine passed. I then placed the point of my finger over the mouth of the instrument and withdrew it, when after removing my finger from the end of the catheter about a drachm of pure blood escaped. I was now convinced that this condition was due to one of two things, either that the supposed second sac met with at the operation was a vesicocele of the inguinal variety, and that I had cut away a portion of the bladder, that part included in the ligature having slipped from its grasp, thus establishing a communication between the bladder and the abdominal cavity into which the urine was escaping; or, that the patient was suffering from suppression of urine. The latter I was rather doubtful to believe, as the examination of the urine made before the operation did not show any kidney lesion. Yet upon second thought I could not see why, if I had included the bladder I was not able to recognize it at the time of the operation, therefore, directed my treatment for suppression. The following forenoon again saw the patient and found him in collapse. I immediately prepared to do laparotomy believing that the bladder had been wounded. The patient being etherized, became almost pulseless due to the depression of the ether, he being already in a much depressed state; nevertheless, I quickly opened the abdominal cavity in the linea alba between the pubes and the umbilicus, introducing the index and middle fingers of my left hand, and with my right hand passed the catheter into the urethra, when I could feel very clearly the point of the instrument free in the abdominal cavity to the left side of the bladder, thus demonstrating that I had mistaken the prolapsed portion of the blad-

der for a thickened hernial sac, it being closely attached to it, and that I had opened it. In the abdominal cavity there was quite a collection of fluid, which when sponged out proved to be bloody urine. All that was left for me to do was to repair the wounded organ and wash out the abdominal cavity, this I was not able to accomplish as the patient died in a few moments.

Case 4.—James E., aged 46 years, was admitted to my wards in the Philadelphia Hospital, during the summer of 1888, with a complete reducible inguinal hernia of the left side. On July 4 I performed the radical cure. The patient made an uninterrupted recovery and at the end of six weeks was allowed to get up and go about the wards without any support.

Case 5.—Patrick C., aged 45 years, was admitted to my wards in the Philadelphia Hospital, during the summer of 1888, with a complete and reducible oblique inguinal hernia of the right side. Operation for the radical cure was done July 8, 1888. Contents of hernia consisted partly of intestine but largely of omentum, the latter being tightly adherent to the sac. Exercising great care, after considerable trouble I succeeded in freeing the omentum which I tied off with catgut ligatures, cutting it away and returning the stump to the abdominal cavity. I completed the operation in the usual way. The patient made an uninterrupted recovery and was allowed to get up and go about the wards at the end of six weeks without any support.

Case 6.—James D., aged 28 years, was admitted to my wards in the Philadelphia Hospital July 26, 1888, from the Insane Department where I was asked to see him, being told that he had a hernia which had come down the night before and could not be reduced, that the patient was suffering great pain, was sick at the stomach, and that his bowels had not moved for three days. An ice-bag had been applied to the hernia, enemata administered, and taxis attempted, without success. The patient had had two or three attacks of a somewhat similar kind but the hernia had always been reduced by taxis; he had been provided with one or more trusses but would not keep them applied. I advised that he be etherized and the radical cure be done under the circumstances even if I should succed in reducing the hernia. The patient was hastily prepared, being given a sponge bath of boracic acid solution, and the field of operation washed and thoroughly asepticised. Ether administered, I applied taxis, reducing the hernia in a few minutes after which I did the radical cure. The case was a simple one there being no trouble in separating the neck of the sac and not finding any adhesions between the sac and its contents. He made an uninterrupted recovery, was kept in bed six weeks, at the end of which time he was sent back to the insane department well, being allowed to go without any support.

Case 7.—F. G. K., a German aged 28 years, was admitted to my wards in the German Hospital August 15, 1888, with a very large complete inguinal hernia of the right side. August 17 I did the radical cure. The sac was freely exposed in the inguinal canal and was found to be very much thickened and most intimately adherent to the surrounding parts. The sac was separated and opened and the contents, consisting of intestine and omentum reduced, after separating the omentum and tying off and cutting away a portion adherent to the sac. The remaining part of the operation consisted in tying off and dividing the neck and fixing the stump of the sac in the internal ring and suturing the canal with deep and superficial sutures. In this case the fundus of the sac suppurated and the patient was confined to bed for twelve weeks when he was allowed to be up without any support. Since his recovery he has been employed at the hospital doing manual labor.

Case 8.—Neil McL., aged 55 years, was admitted to my wards in the Philadelphia Hospital in the summer of 1888 with a large complete oblique inguinal hernia of the right side. September 17, 1888, I did the radical cure. I met with no difficulty until I opened the sac when a number of adhesions attaching the bowel to the sac were exposed, which were long enough to admit of complete reduction of the bowel. These I tied off, close up to the bowel, separating them from the sac, and cutting away the free portion. The operation was completed in the usual way. The patient made an uninterrupted recovery, was kept in bed six weeks, at the end of which time he was allowed to get up and go without support.

Case 9.—Joseph P., aged 58 years, was admitted to my wards in the Philadelphia Hospital in the summer of 1888. On September 23, 1888, Mr. Anandale, of Edinburgh, Scotland, who was on his way home from attending the Congress of American Physicians and Surgeons, in Washington, kindly agreed to operate for the radical cure of hernia in the presence of a number of my medical friends. Mr. Anandale exposed the sac throughout, carrying the incision from the upper part of the canal to the base of the scrotum. With considerable difficulty the sac was freed, the adhesions between it and the tunica vaginalis being very firm, calling for considerable handling of the testicle which Mr. Anandale said was not objectionable. The sac was opened and the contents, which were adherent at all points, were reduced after the separation of the adhesions. The sac was now tied off with a long catgut ligature close up to the internal abdominal ring, and all that portion to the distal side of the ligature was cut away. With either end of the ligature threaded, the walls of the canal were brought together. The wound healed up without any suppuration. Unfortunately the testicle became

very much inflamed, resulting in an orchitis which suppurated, requiring openings and counter-openings and the introduction of drainage; notwithstanding all the possible care which was exercised the patient died from septicæmia.

Case 10.—Wm. H. S., aged 25 years, was admitted to my wards in the German Hospital on the evening of November 26, 1888, suffering from a left inguinal strangulated omental hernia which occurred on Friday, November 23, three days before admission to the hospital. The patient stated that the tumor had made its appearance suddenly, and that he had not had a hernia before this accident.

When admitted he was in a state of collapse, with a temperature of 96° F., a feeble and rapid pulse. He had a bowel action on the day of the accident, and not again until the day of admission into the hospital when he had several thin passages.

The swelling was tense, painful and red, giving no succussion on coughing. He had vomited several times since the day after the accident, the matter vomited when examined proved to be only of a bilious nature. He was troubled constantly with hiccough.

To my mind the subjective symptoms presented here, together with the presence of an irreducible tumor at one of the hernial orifices, which tumor had made its appearance suddenly, were those of strangulated hernia. Notwithstanding the looseness of the bowels a symptom in this case, I felt convinced that all the trouble was attributable to the hernia, and particularly so as the patient was very much depressed. It is true that these symptoms could have been caused by a gastro-enteritis, yet I do not think that there is any surgeon who would not have advised the course which I pursued, viz.: to explore and be governed by the result of the exploration. I have seen cases of acute adenitis, particularly of the glands in the cribriform fascia, where the patients gave the history of the tumor having appeared suddenly, and following straining efforts, also where there was sick stomach and constipation. These are cases which simulate hernia, and in which, it may be impossible upon our first visit to make a positive diagnosis, but where, I think, other things being equal, it is advisable to cut down, and if a hernia be found, to operate; or if enlarged glands, to remove them. I have seen cases of strangulated hernia where the patient had several loose passages from the bowels after the occurrence of strangulation, therefore I do not think that we should always expect to meet with the opposite condition, that of constipation.

An incision was made over the line of the tumor, which included the upper part of the scrotum, and the different layers of tissue divided until the sac was reached. Upon opening the sac the contents were found to consist of the geat omentum, the transverse colon presenting at the sac. The lower part of the omental mass was in contact with the testicle and separated from the upper portion of the mass by a partition extending across the tunica vaginalis. In other words, this was a case of congenital hernia into the funicular portion of the tunica vaginalis with perforation of the septum closing the tunica vaginalis.

The omentum being in a questionable state I tied it with catgut ligatnres and cut it away; my experience has taught me that where the omentum has been out for any length of time, and where it is adherent to the sac, whether strangulated or not, it is best to treat it in this way. In cases of irreducible omental hernia complicating a recently strangulated gut, where I have separated adherent omentum from the sac in exposing the gut, after having relieved the strangulated bowel and having reduced the omentum, to my disgust at the autopsy, I have found what appeared to me to be healthy omentum at the time of the operation, gangrenous; while, on the other hand, I have had no ill effects by cutting it away.

Case 11.—Thomas R., æt. 50 years, was admitted to the German hospital Dec. 3, 1888, with a complete oblique inguinal hernia of the right side; hernia first noticed twenty-four years ago. Patient has never been able to wear a truss that would hold the hernia up satisfactorily, or that would not cause a great deal of pain; December 8, I performed the radical cure. Sac was exposed throughout the inguinal canal, to the contents of which it was most intimately, adherent, calling for great care in separating it. Sac opened and a large piece of omentum, which was adherent to the inner wall of the sac, separated and tied off with catgut sutures, when the stump with the intestines composing the contents, were reduced; patient made an uninterrupted recovery, and at the end of six weeks was able to get up and go about without wearing any support. June 20, six months after the operation, the patient came to my office, when I learned that the last of the four of the deep set of sutures had come away. The first of the four sutures commenced to annoy the patient by ulcerating its way through the surface four weeks after leaving the hospital, since which time the others have come out in succession. This has been a great source of annoyance as well as inconvenience to the patient, but notwithstanding, he has been able to go on with his work, that of Street Car conductor. Examination of the site of operation shows conclusively that the hernia is returning, therefore, I have had made a light spring truss with flat pad, which the patient wears with great comfort.

In the event of the hernia attaining any size, and the patient not able to hold it up with a

truss, I will advise a second operation, when I will dispose of it after the manner of McBurney.

Case 12.—Wm. P., æt. 75 years, was admitted to the St. Mary's Hospital Jan. 15, 1889, under the care of my colleague, Dr. W. W. Keen, with a large and complete inguinal hernia of the right side. It was found impossible to hold this rupture up by any form of truss several having been tried. The patient becoming very despondent at not being able to have it kept up, begged Dr. Keen, and afterwards myself to operate. After further trial with trusses, under Dr. Keen's and my own supervision, we told the patient that if he still insisted upon operation that it should be done.

February 6, 1889, I performed the radical cure after my usual manner, that of tying and dividing the neck of the sac, fixing latter at the site of the internal abdominal ring, and suturing the canal with a deep and superficial set of aseptic silk sutures. Patient died February 13, not from any active trouble, such as peritonitis, obstruction of the bowels or septicæmia, but from general debility. The result of a profound atheromatous change in the patient's arteries, the circulation was very defective, and at the expiration of five days after the operation, gangrenous points were present in the abdominal walls, also in the scrotum. An autopsy made twelve hours after death, for a two-fold purpose, first to learn the cause of the death, and secondly to secure dissection of the abdominal walls including the field of operation. Examination of the abdominal and thoracic cavities proved negative, the heart and main vessels were markedly atheromatous. The inguinal canal was carefully examined and found to be entirely occluded, as shown by these drawings, the union of the wound was perfect. These drawings show how beautifully the canal is occluded after this operation, also the presence of the neck of the sac at the site of the internal ring.

Case 13.—James Mullen, aged 48 years, was admitted to St. Mary's Hospital March 2, with an incarcerated oblique left inguinal hernia, which was rendered reducible by rest in bed, small and repeated doses of castor oil, with enemata of soap suds and spirits of turpentine.

This not being the first time the patient had suffered from temporary irreducibility of his hernia, I suggested that he let me do the radical cure. March 17, 1889, I operated, meeting with no complications. Was discharged wearing no support.

Case 14.—May 10, 1889, I operated on Wm. S. C., aged 20 years, medical student, for the radical cure of a small complete inguinal hernia of the right side, doing McBurney's operation, with the exception that I did not remove the fundus of the sac. The sac was very easily separated, when it was opened and tied off well within the margins of the internal abdominal ring with aseptic silk and divided. During the first forty-eight hours following the operation the patient complained of a great deal of pain in the region of the kidneys, severe enough to prevent him from resting. He was not able to pass water, and was therefore catheterized, when the urine was found to be small in quantity and bloody. Dry cups were applied to the back with warm applications, and non-stimulating diuretics given internally. At the end of this time the patient was entirely relieved of these symptoms, after which he made an uninterrupted and uneventful recovery.

Case 15.—June 3, 1889, I was asked by Dr. Hurtzel to see Mrs. S., aged 62 years, suffering from a strangulated femoral hernia of the right side. Patient had been etherized two days previously by another physician and taxis applied, but was not able to reduce the hernia. On the morning of June 3, Dr. Hurtzel, her family physician, was sent for and, upon his arrival, attempted taxis without ether, but failed to make any impression upon the hernia. The patient had presented all of the subjective symptoms consequent upon this trouble, but her general condition was good. We advised an operation, to which the patient agreed. Patient was given a sponge bath of boracic acid, the field of operation was shaved, thoroughly cleansed and rendered aseptic. Ether being now administered, I proceeded to relieve the strangulation. The sac was exposed and the neck cleared; fundus of the sac gangrenous, and slightly adherent to the contents. With a hernia knife I relieved the constriction by dividing Hey's ligament. I next opened the neck of the sac, when the contents proved to be intestine and omentum, which were slightly adherent to the sac, but very readily detached without occasioning bleeding. The gut was discolored, but not gangrenous; therefore, the contents were returned to the cavity at once. The sac was now separated up to the femoral ring and pulled down slightly, when it was tied off with a strong catgut ligature and the portion of the sac to the distal side of the ligature cut away, thus allowing the pedicle to slip back within the abdominal walls. I removed the sac for a two-fold purpose; first, to get rid of all that part which was gangrenous, and secondly, to enable me to perform a radical cure. The opening made in the sheath of the femoral vessel was closed with catgut sutures. The next step consisted in bringing the pubic and iliac portions of the fascia lata, with the overlying cribriform (deep layer of the superficial fascia), together with strong, heavy catgut sutures. Beneath these sutures I placed three strands of catgut drainage, the skin and superficial layer of the superficial fascia were brought together with silver wire, and the wound dressed antiseptically. Patient made an uneventful recovery; was advised to remain in bed for five weeks, when she was told she could go around without wearing any support.

THE SANITARY DISPOSITION OF THE DEAD.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY C. A. HARVEY, M.D.,
OF NEW YORK CITY.

The problem "What disposition shall be made of the dead?" as it confronts us from a sanitary stand-point, is one around which gather very great and important interests and not a few difficulties. Ever since men became gregarious this problem has had its sphere of more or less importance. If it has long failed of recognition, through the inattention, lack of reflection or stupidity of men, the fact of the importance of the problem has existed all the time.

To the honor of the American Medical Association, it should be remembered that some of its prominent members took advanced ground at quite an early day, upon a more sanitary way of disposing of the dead than that of inhumation. At the meeting of the Association in New Orleans five years ago, a committee was appointed to consider the subject of cremation of the dead, and report at the next annual meeting. Dr. James M. Keller, of Arkansas, was made Chairman of that committee, and read his report at the meeting in St. Louis, May 6, 1886, in which he says, "we believe that the horrid practice of earth-burial does more to propagate the germs of disease and death, and to spread desolation and pestilence over the human race, than does all man's ingenuity and ignorance in every other custom or habit. Towards the conclusion of his report he adds: "The grave-yard must be abandoned. The time has come for us to face squarely the problem, how to dispose of our dead with safety to the living. And your committee has an abiding faith that you will earnestly, and at once say, that the earth was made for the living and not for the dead, and that pure air, pure water, and pure soil are absolutely necessary for perfect health. Only sceptics deny that the dead do poison these three essentials of human life." The Association, not yet fully prepared to recommend the adoption of cremation, resolved that "the report with its conclusions be referred to the Section on State Medicine." At the meeting held in Chicago, June, 1887, the committee on cremation presented another report which was again referred to the Section on State Medicine. It does not appear, from an examination of the Society's Journal, that any further report was made at its meeting last year. And therefore the matter is still in the committee. So that in discussing before this Association to-day the question of the sanitary disposition of the dead, I speak to those who are not only prepared to listen, but to a highly intelligent and scientific body, who are ready to lend their indorsement to that method which may be demonstrated to avoid all the objections which lie against others, which will meet all sanitary demands, and will also have respect to those delicate and fondly cherished sentiments which a Divine Father has implanted so deeply in the hearts of his children.

The great and urgent need of an immediate sanitary reform in the disposition of our dead is, even yet, comprehended in any measure, by but very few. The masses, the *hoi poloi*, have no thought whatever of any such necessity. Hence, the few who are coming to take alarm at the situation must think and act for the many. In all thickly populated and long settled districts the dead outnumber the living. And the longer the practice of burying goes on the greater will be the proportion of those beneath the ground in comparison to those above it. All the time the dead are increasing in numbers far beyond the living. So that the oft heard expression "Gone to join the majority" is more true than poetic. Could two pictures be drawn, one showing the activity of life and all human experience on the surface, and the other depicting all that which is but from two to six feet beneath the life-teeming surface, that vast charnel-house, with the slow progress of decay in every stage, sloughing of decomposing bodies, the oözing from coffins poisoning the surrounding earth, and borne by percolation into underground water courses which feed the neighboring wells, or which issue into water-sheds like that of the Croton—in which are eighty-three cemeteries—storing in congenial soil the germs of disease, which will sooner or later, in many cases, come to the surface with epidemic-scourging; and much more, that is too disgusting to mention, could these pictures be drawn true to life and death, and placed side by side, what contemplation, what reflection would they awaken! not to speak of the shock which the contrast would produce!

Says the eminent surgeon and physician, the late Dr. Samuel D. Gross: "If people could see the human body after the process of decomposition sets in they would not want to be buried. It takes a human body fifty, sixty, eighty years, yes, even longer than that to decay. Think of it! The remains of a friend lying under six feet of ground, or less, for that length of time, going through the slow stages of decay, and other bodies all this time being buried around these remains. Infants grow up, and pass into manhood and womanhood; grow old, and get near the door of death; and during all that time the body which was buried in their infancy lies a few feet under ground in its sickening state, undergoing the slow process of decay."

The cemeteries of the city of Brooklyn occupy nearly 2,000 acres of land. An eminent physician gives it as his opinion that the prevailing

wind blowing over these corruption festering plague spots, carries the germs of typhoid fever and diphtheria to Flatbush, and swells the death-rate of that community to its present alarming magnitude.

According to the report of the French Academy of Medicine, "The putrid emanations of Pere-la-Chaise, Montmartre, and Montparnasse have caused frightful diseases of the throat and the lungs, to which numbers of both sexes fall victims every year." "Thus a dreadful throat disease which baffles the skill of our most experienced medical men, and which carries off its victims in a few hours, is traced to the absorption of vitiated air into the windpipe, and has been observed to rage with the greatest violence in those quarters situated nearest the cemeteries."

It is said that Professor Selmi, of Mantua, has discovered in the strata of air which have remained during a calm for a certain period of time over a cemetery, organisms which vitiate the air and which are dangerous to life. This was proved after several experiments. When the matter in question was injected under the skin of a pigeon a typhus-like ailment was induced, and death ensued on the third day." Experiments prove that these mephitic gases will rise to the surface through eight or ten feet of earth, and that there is practically no limit to their power of escape. In a grave-yard at Stuttgart, in which only 500 bodies were interred yearly, and not more than one in a grave, the north-west wind rendered the emanations from the dead perceptible in dwellings 800 feet distant.

It is related that a grave-digger in Italy named Pisto, went into a vault to steal the shoes from a corpse, when he was overcome with the poisonous gases and met with instantaneous death, falling on the dead body. Unger relates the case of a grave-digger going into a vault in Madrid for the purpose of disposing of another corpse, who fell down dead. Two other men who tried to save him were likewise overcome and died.

Cases similar to the above are very numerous, and have doubtless been met with in the reading of every member of the Association. The usual symptoms of the poisons are faintness and giddiness, and often suffocation. Sir Spencer Wells says that, "decomposing human remains so pollute the earth, the air, and the water, as to diminish the general health and average duration of human life." Dr. Playfair says that "the inspiration of grave-yard gases, entering the blood produces fever; communicated to the viscera, it gives origin to diarrhœa; and may be the cause of consumption."

While ammonia and offensive putrid vapors are given off from bodies decomposing in graves, carbonic acid, which makes cemetery gases so dangerous, is the largest product. Pasteur has published within a few months an account of experiments he and some assistants have recently made with the soil on the tops of graves. He claims that living germs from decaying bodies reach the surface; that animals inoculated with these germs show all the symptoms, and die of the disease which proved fatal to the occupant of the grave. These germs, as well as the poisonous gases, so permeate and pollute the soil, that they find their way into the underground water-courses, and pollute much of the water used for domestic purposes. The Croton water-shed, in which there are 183 cemeteries, large and small, is a conspicuous example. Who can wonder that those who have even a slight conception of the unsanitary horrors of inhumation should bound to the opposite extreme cremation? and, not knowing of any other method, should prefer burning to burying? But, granted a method quite as sanitary as cremation, and yet in perfect consonance with the delicate sentiment, which demands for the departed dead the greatest reverence and respect, would it not be very acceptable? The most enthusiastic cremationist is a sanitarian. If, then, his demand for a sanitary disposition of the dead is as fully met by another method, which to the vast majority of people will be, for many good reasons, more acceptable, will he not be more than willing to aid in its adoption? The sanitarian will not object to being a humanitarian as well. But the mere Dictum, on the part of anybody, respecting the possibility, and even feasibility of such a plan, must, naturally enough, be taken *cum grano salis*. But, were it not so, it would be unfair to impose on anybody's credulity, or to expect the acceptance of a postulate without providing good and sufficient data.

Very happily in this instance, such data is at hand. Experiments in the desiccation of human bodies have been going on for the past two years. In a laboratory connected with one of the medical colleges in New York, an apparatus has been prepared for carrying on these experiments in an exact scientific manner. The result is procured by the use of dry air. Air-tight boxes of galvanized iron are used. After placing a body within, a glass top, the length of the box, is sealed on. At one end of the box is an induction pipe, at the opposite end a conduction pipe. The atmosphere is rendered anhydrous by the use of calcium chloride. After the humidity is extracted the dry air at once enters the box and comes in contact with the body, then passes on to a flue and through a large gas flame which is kept burning therein. A record is made three times daily of the hydrometer, at the point where the atmosphere enters the outside induction pipe; also of a second hydrometer placed at the point where the air is dryest after passing over the calcium chloride, also at the point of entering the box; and of a third hydrometer placed in the conduction

pipe at a point beyond the cadaver, recording exactly the amount of moisture the air has absorbed from the body in its passage. At a more remote point in the conduction pipe an anemometer is placed showing the velocity of the air current; which current can be regulated from one hundred feet to eight hundred feet per minute, as desired. But this is only a temporary apparatus, and cannot, therefore, embrace the conditions which a properly constructed Mausoleum will contain, and some description of which must be given in order to gain any clear or correct conception of the sanitary system of the desiccation of the dead. It is needless to remark that this method is an entirely new departure from any heretofore employed for disposing of the dead. It avoids all the loathsome and revolting features of earth-burial, with its endless train of unsanitary evils, and dangers through poisoning the air, earth and water, and the storing of disease-germs liable to break out in epidemics; avoids the dangers of the unsanitary tomb, and also avoids the shock to the delicate sentiment, which shudders at the thought of the destruction of the remains of loved ones by fire; it avoids the medico-legal objection to the destruction of the evidences of crime, and is even more perfectly sanitary than the process of cremation. The tissues are deprived of moisture, leaving them in a state of complete preservation. A condition which renders a critical examination and a chemical analysis of them, at any time, a very simple and easy matter.

A great number of sepulchres are constructed together in one grand Mausoleum. The sepulchres are formed of concrete, in rows and tiers, similar to the vaults in a safe deposit bank; except where family groups or clusters are specially arranged, with sitting-rooms or parlors adjoining them. These sepulchres are to be constructed in large, magnificent and elegantly appointed Mausoleum buildings, much finer and grander than any the world has heretofore known. They may be built after any style of architecture, Egyptian, Corinthian, Renaissance, Romanesque, or in less classic forms. A building one hundred feet square will contain ten thousand sepulchres. One three hundred feet long by one hundred wide, will contain thirty thousand, or a number equalling the usual allowance for a cemetery of some ninety acres. Thus, showing a great economy in space, which is so valuable near large cities. These buildings are to be constructed of concrete throughout except the outer walls, which may be of granite, brick, vitrified brick, blocks of glass, blocks of slag, or of any time-proof and indestructible material. The sepulchres have one opening, which fronts a corridor, for admitting the body; and, when that is placed within, a plate-glass front is hermetically sealed into that opening, and this is again covered with a marble or metallic door and made secure. There are conduits formed in the concrete, which bring dry air into the sepulchres at one end, and others which take it out at the opposite end. The air, as it passes out is no longer dry, but is laden with gases and moisture which it has absorbed from the bodies, and is now borne through conduits to a furnace, located in an annex adjacent to the mausoleum, where it passes through the fire and is purified; so that no deleterious gases or offensive odors can ever escape into the atmosphere. The air which is drawn into and passes through the sepulchres is first rendered anhydrous in a large drying room into which it is forced, and from which it is distributed to the sepulchres, where it absorbs the moisture from the bodies in its passage. By this process a steady current of dry air is pouring into and through the sepulchre, and doing its work most efficiently on its way.

Very few persons, even among chemists, are fully aware of the marvellously absorbing power of absolutely dry air, and the greedy avidity with which it seizes and appropriates moisture. When a moderate current of such air envelopes a human body in an air-tight sepulchre, constantly drawing the moisture out of the body and bearing it away, the dry air flowing in as the moisture-charged air and gases are drawn out, the process of desiccation goes steadily and rapidly forward until it is accomplished, which is done in about four months.

After the work is finished the conduits are closed. As dry air only can be in the sepulchre at the time it is closed, and as the sepulchre is hermetically sealed, and therefore, atmospheric air cannot reach the now desiccated body. Here it will repose in security and cleanliness thereafter. The body of a man who died one year ago is now lying in an apparatus at the New York University Medical College in a complete state of desiccation. Another body of an adult is now undergoing desiccation in a similar apparatus, the process having been commenced eight weeks ago.

Having witnessed experiments made in Washington, D. C., Dr. A. Y. P. Garnett, formerly President of this Association, in answer to an inquiry from New York, writes:

WASHINGTON, D.C., April 14, 1888.

Dear Sir: Your favor of the 12th has been received. In reply I take pleasure in saying, that I have had an opportunity of witnessing the experiment of desiccating a human body, and feel persuaded that the invention for that purpose is destined to prove one of vast importance. The principle upon which it is constructed is one of scientific accuracy, and has been reduced to a practical fact, so far as I can see. I do not hesitate to pronounce the scheme a positive success. A. Y. P. GARNETT.

Some of the most eminent American Jurists have already given, privately, the opinion, that should incineration threaten to become a prevalent mode of disposing of the dead, statutes

would have to be enacted inhibiting it, because of its absolute destruction in many cases of the evidences of crime. Not alone in the cases of poisons, but of malpractice and of assault, in every diversity of form. It may be replied that a competent board or commission could be provided for, who should make an examination into the cause of death in every case, and thus meet the legal objection raised. But due reflection must show the fallacy of such a suggestion. For, as will be admitted by every practitioner, though the symptoms and manifestations may seem to point directly to certain causes of death, the unmistakable cause can not, in a vast number, if not in a majority of cases, be absolutely and infallibly known without a complete autopsy.

The almost insuperable objections and embarrassments in the way of such a practice as that, are too apparent to be seriously considered by thoughtful minds. Therefore it would seem to be quite impracticable.

I have intimated that this system may be even more sanitary than cremation.

When Abraham buried Sarah in the field at Machpelah, the question of sanitation was not raised. But when in 1843, the elder Chadwick, and others with him in London, began their investigations of the very unsanitary manner in which the dead of that great metropolis were disposed of, the question of sanitation, which was raised, imperiously demanded public attention, and the passing of statutes to regulate it.

So, when at Washington, Pa., or at Fresh Pond, L. I., two or three bodies are burned a month, the question of sanitation as the accompanying result of the burning is not raised. But let burning become the one means for disposing of the dead, and the situation would be greatly changed. Suppose New York City with its suburbs, where the deaths are said to number near 75,000 annually, were to employ no other means, this would require the burning of about 230 bodies daily. At an average weight of 100 lbs. to a body, this would make 7,500,000 lbs. of "green" human flesh to be burned annually, or 33,000 pounds daily. The fumes from a rendering house are voted to be an intolerable nuisance everywhere, and, hence, it is demanded that these and like nuisances shall be far removed from human habitation. But a crematory which should burn the dead of New York, would be nowhere tolerated in the incessant pouring forth of its unendurable odors. The question of sanitation would then become a debatable one between inhumation and cremation. But the process of desiccation burns only the gases and vapours which are drawn from the bodies. The process is a slow one, and, therefore, the escaping products of the bodies are very easily disposed of in the most sanitary manner possible. They are during the whole process under perfect control.

Another advantage possessed by this Mausoleum method is the prevention of body-snatching. The building is so perfectly secure and constantly watched that sepulchre robbing is impossible.

An Irish woman had lost her husband. A neighbor went in to lend her sympathy. The widow replied "O t'is hard, indade, but I know where he is o' nights now!" Had she really known the insecurity of the grave, she would not have been so confident.

An electrical device, with wires to be placed in contact with the body, is provided for, so as to prevent entombment alive. I may add, in conclusion, that the expense of sepulture in the new Mausoleum can be made less than that of cemetery burial.

Dr. Forman, of Philadelphia, said that we shall probably not live long enough to see much reform in this direction, but he wished to say that the danger of contagion from the dead body had been greatly exaggerated. Germs die quickly in our dead bodies. Virchow, for instance, always allows a body to lie a few days after death for this to take place, for there can be no danger of infectious fungus in a body one week after death. Even the danger of infection from small-pox and scarlet fever disappears in a short time.

Dr. Carroll, of New York, said the contagion was often spread not so much from the dead body as from the pall and other fabrics used which served to convey fomites. But, that it is an established fact that disease germs live in the dead body, and propagate themselves in the grave.

Dr. Bell, of Brooklyn, thought that the relation to water supply was the important matter. The dead are buried too deep, and the emanations do not pass off above, but below, through the water; in this way he has been able to account for epidemics of typhoid in New York.

Dr. Harvey, in closing the discussion, said that by the method which he advocated the form and features of the diseased were left plainly recognizable for an indefinite length of time; furthermore he reiterated his opinion that unsanitary effects will not result from this plan proposed.

Puerperal Nephritis.—Dr. Cotman, at a recent meeting of the Hunterian Society, showed the kidneys from the body of a plethoric woman, aged 40, who had puerperal eclampsia, and died comatose seven days after the birth of her tenth child. A condition of recent inflammation in an early stage was shown, the pyramids being dark and the cortex swollen and soft. She had apparently recovered from the convulsions, and albumen had nearly disappeared from the urine, when the fatal coma supervened.—*Brit. Med. Journal.*

HOARSENESS IN PROFESSIONAL SINGERS, AND ITS TREATMENT.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CHARLES E. SAJOUS, M.D.

The fact that hoarseness is only a symptom, and, therefore, but one of the manifestations of affections usually considered under general headings, probably explains the limited degree of attention devoted to it as a separate subject in medical literature at large. To this, doubtless, may be ascribed the difficulty commonly experienced by those who, in their efforts to relieve this condition, follow the teaching of their text-books and carry out the therapeutical indications of the affection diagnosed. A wider experience in this class of cases, however, demonstrates that in order to obtain satisfactory results it is necessary to consider hoarseness as an entity having a pathology and therapeutics of its own. As we are to consider in this paper only the class of emergency cases most frequently seen in office practice, and presenting some difficulty in differential diagnosis, all conditions in which a laryngoscopic examination will readily explain the immediate cause, such as tumors, marked paralysis, advanced tuberculosis, syphilis, etc., will not be alluded to.

That hoarseness, to be intelligently understood, should be considered individually, is shown by the fact that although in the majority of cases a mild laryngitis is the immediate cause, yet a large number present no objective symptoms, the vocal bands retaining their pearly hue and the surrounding parts their normal appearance. These cases can not be considered as suffering from laryngitis merely because hoarseness is present, a fact soon demonstrated by the failure of remedial measures calculated to overcome an active inflammatory process.

Although in the class of cases to which this paper is limited, and which represent by far the great majority of patients presenting hoarseness, the integrity of the human voice may be compromised by modifications, superficial or deep-seated, of minutest degree, the pathological process coming into play may be differentiated with comparative exactness when a clear history can be obtained, together with a satisfactory examination of the nasal, pharyngeal and laryngeal cavities.

Unfortunately the microscope can scarce be brought to our assistance to enable us to place our deductions upon a solid footing, the absence of all danger to life rendering it practically impossible to obtain a specimen of the histological changes occurring during hoarseness. Were it even otherwise, and sudden death should occur to a patient suffering from hoarseness, the vascular elements of the specimen of laryngeal muscle, etc., obtained would probably have undergone a certain degree of transformation incident to the disorder which caused death, or to the contraction of capillaries occurring *in articulo mortis*,[1] and thus involve at least an element of doubt as to the reliability of our observations.

An essential requirement for the proper production of sound is absolute integrity of the edges of the vocal bands when they are approximated by the vocal muscles. When the glottis is widely opened the bands are not, as implied by the majority of works on anatomy and in special treatises, "prismatic in shape, having their bases upward," but form, on the contrary, a sort of a hard cushion with a rounded border on each side of the laryngeal cavity. As the muscles come into play the bands gradually lose their rounded shape and their edges becoming sharper at the expense of their base, the prismatic form can soon be recognized, the free edge of each band having become, by this time, especially if a high-pitched note be produced, as keen as the edge of a knife. This keenness is essential, if the purity of the tone is to be preserved; and if, through inflammatory changes of the mucous membrane or its underlying tissues, its outline becomes wavy, nodular, or in other ways deformed, the purity of the voice is proportionately impaired. The ease with which an inflammatory process of any degree may cause hoarseness will be appreciated, especially when we remember that in inflammation the blood vessels, after contracting, dilate sometimes to twice their normal size and increase in length at the same time, while the veins, imitating the arteries, soon follow suit in all but the elongation.[2] Closely allied to alterations of the bands proper, and directly concerned in the production of hoarseness, are those involving the laryngeal side of the interarytenoid space—in other words, the posterior wall of the laryngeal cavity. Inflammation in this locality also offers an impediment of a mechanical character. A greater degree of thickening takes place through the fact of the tissues being comparatively less dense. The contraction of the membrane into folds being thus limited, the imperfect closure of the glottis causes, especially in the high registers, not only hoarseness, but waste of breath through the gap left patent by the non-approximation of the portion of the glottis behind the vocal processes.

Among the local causes which we will first consider is *perverted lubrication* of the larynx, and especially of the bands proper. As shown by Desvernine, of Havana,[3] Coyne demonstrated in 1874 that the bands, which were thought, till then, to be only lubricated from the laryngeal sac, possessed a few mucous glands. He failed, however, to detect their full number. Desvernine

[1] Morell Mackenzie, Diseases of Pharynx, Larynx and Trachea. London, 1880.

[2] Maynac: Pathologie Générale. Paris, 1883.

[3] Annual of the Univ. Med. Sciences, Philadelphia, Sec. G, p. 1, Vol. iv, 1889.

found them in the supra- and infra-glottic region, none being observed in the true glottic region. That the surface, at least of the laryngeal mucous membrane, may be so modified by total or partial absence of lubrication as to induce even marked hoarseness, need hardly be questioned. We find its verification in the results following the same condition in other portions of the upper respiratory tract, and in clinical evidence. It would seem, furthermore, that increased tendency to local trouble from this cause would naturally follow the presence of squamous epithelium over the vocal bands and the interarytenoid space, instead of the protecting ciliated epithelium which lines the surrounding parts.

Hoarseness dependent upon deficient lubrication is most frequent in male singers, a circumstance pointing to tobacco as a possible element in its causation. This does not apply, however, to the toxic effect of the plant itself, but to the irritating action of air contaminated with smoke, which the patient inhales. It may in that manner affect female singers also. The prolonged inhalation of dust, as occurs in railroad traveling, etc., is another prolific cause which at times greatly compromises a first evening's performance. The larynx presents some variations from the normal, the most noticeable being a slight redness, which in professional singers can be of but little diagnostic value, however, since in many the larynx is normally hyperæmic. This redness may be especially marked at the vocal processes, where a small pearl of thick, white mucus is sometimes seen. The subjective symptoms consist principally in a constant desire to "hem" and a sense of constriction at the throat. The singing voice, though not greatly altered, is more metallic or "rasping" in timbre than usual, greater effort being required when the upper register is attained. A pricking sensation is frequently experienced after a few bars have been sung, which generally ends in an explosive cough. That this condition, frequently observed in singers if looked for, is but the primary stage of subacute laryngitis, is to be doubted, the subsequent history comparing in no way with that of this affection. It is a mild form of laryngitis sicca, not, however, in the sense in which the term is understood, "an *exudation* of a secretion changed in quality a tendency to dry into scales and to become attached to the mucous membrane,"[4] but in that implied by an exact translation of "sicca." There is no more analogy between the two affections clinically than pathologically, there being no scales, no underlying localized irritation, no aphonia, no hæmorrhage. In laryngitis sicca secretion *exists*, though perverted; in the affection in question there is *absence* of secretion, not due, probably, to closure of the glandular orifice of the ventricle of the larynx—although the fact that cysts of retention (Bruns, Luschka) are sometimes observed demonstrates that such a condition may occur—but to atony from exhaustion following the exaggerated efforts on the part of the glandular elements to maintain the superficial tissues in a state of lubrication, notwithstanding the desiccative property of the surrounding atmosphere. In cases in which deficient lubrication is present the voice improves as the performance progresses, instead of becoming worse, as it would were a true inflammatory process present, especially if the original causes of irritation are strictly avoided—smoky atmosphere, etc. The desire to "hem" and the tendency to cough gradually vanish, and at the end of the performance all evidence of the disturbance has disappeared.

A disorder of so temporary a duration might perhaps be considered unworthy of special attention at our hands; yet it merits especial consideration for three reasons: 1. It may be, and doubtless is, frequently taken for a trouble of a graver character, to the detriment of the patient, who is forbidden to use his voice. 2. Astringents are generally used in cases presenting symptoms that may be erroneously ascribed to a catarrhal disorder, the glandular atony being thus encouraged. 3. We can, by recognizing it, save our patient from the mortification of partial failure, to which he is subjected at least during the early part of a performance, most probably the first of a series, and during which the "first impression," so dear to artists, may be greatly compromised. The therapeusis of this condition consists of a warm spray, every two hours, of a saturated solution of potassium chlorate, and 10 grains of ammonium muriate in a tumblerful of water at the same intervals. The last dose should be taken at least three hours before the performance, to avoid exposure during the stage of perspiration which follows the active administration of the remedy. Between the acts a lozenge containing 2 grains of the drug is sometimes found beneficial.

Most frequent among the *inflammatory causes* of hoarseness are those due to the presence of catarrhal changes of a chronic character in neighboring cavities, especially the nose, naso-pharynx, pharynx and tonsils. This origin is sufficiently frequent, in fact, to cause a few writers to ascribe every case of catarrhal hoarseness to some nasal trouble. The intimate anatomical relation between all parts concerned renders it quite certain that whenever a chronic nasal or pharyngeal affection exists in a singer, the least exposure to any exciting cause will induce an extension of the inflammatory process to the larynx by continuity of tissue, the predilection of the vocal organ proper in this connection being easily explained by the constant and laborious use to which it is subjected. But that this inflammatory process cannot develop without nasal or pharyngeal catarrh as a *prima facies*, appears to

[4] Gottstein, translated by P. McBride. Breslau and London, 1883.

me as illogical as the assertion that an intestinal affection must find its origin in the stomach. The fact, however, that nasal catarrh is present in the majority of the cases we are called upon to treat makes it imperative that we should examine the nasal and pharyngeal cavities in every case of hoarseness, and that with considerable care, for the reason that an almost imperceptible though very active focus of irritation may be found here.

Lesions of the anterior nasal cavities are not so apt to cause hoarseness as those of the naso-pharynx or pharynx proper, probably because of the greater remoteness of the parts, and the fact that the secretions are apt to be voided anteriorly. A coryza or an acute exacerbation of a simple chronic rhinitis, unless it involves the naso-pharynx, will not cause hoarseness, but "throw a veil over the voice," as professionals term it, its carrying power being greatly diminished from impaired resonance, due in turn to the erection of the turbinated bodies. When hoarseness is present, therefore, whether resonance be impaired or not, the naso-pharynx will usually be found to be the focus to which hoarseness may be traced.

Whether the implication of the larynx is due to the irritating action of the secretions upon the inter-arytenoid space, on which they will be liable to fall, or to extension of the inflammation along the pharyngeal wall, I am unable to say; but I am inclined to believe that the larynx is assailed in two ways—first, by inflammatory contamination through continuity of tissue, the pharynx having become inflamed principally through the irritating contact of the secretions; and, second, by the superficial congestion brought about by the viscid secretions. The fact that the posterior wall of the larynx, *i. e.*, the inter-arytenoid space as far as the vocal processes, shows the greatest amount of congestion, would seem to lend considerable weight to this theory. Much the same action may result from inflamed pharyngeal follicles; the secretions being more mucoid than purulent, however, the laryngeal congestion and hoarseness are slighter in proportion. Hoarseness from this cause is frequently accompanied by coughing, especially when the follicles are situated in the lower portion of the pharynx, its most sensitive portion. An intense pricking sensation is experienced, which more than compensates for the milder degree of hoarseness. The tonsils and uvula occasionally take part in the inflammatory process, increasing in proportion the intensity of the trouble.

The marked and persistent hoarseness which sometimes characterizes these cases is not to be wondered at when the appearance of the larynx in some cases is remembered. The coloring may involve the entire cavity from the aryteno epiglottidean folds to below the vocal bands, and range from the deepest carmine to the normal yellowish-pink, the posterior portion of the glottis being always two or three shades darker than the rest, and presenting perhaps an accumulation of secretion. Much faith cannot be placed in these physical signs in professionals, however; for, as already stated, the vocal organs of some, especially males, appear markedly congested in the normal state.

In all the conditions just described the integrity of the surface of the vocal bands is not alone invaded, as would seem reasonable to expect, considering the exciting causes. Semeleder, now of Mexico, twenty-seven years ago wrote these lines, which have withstood the test of time: "If we remember that beneath the extremely delicate mucous membrane there lies a very fine and firmly adherent layer of elastic tissue which, being in turn firmly adherent, covers directly the vocal muscle, we can infer that an inflammatory disease of the mucous membrane of the larynx can not easily exist without being followed by exudation into the layers beneath."[5] This can still be applied to illustrate the penetration of the inflammatory process in the majority of the cases, and, at the same time, to explain the poor success of treatment by topical applications where these are unaccompanied by internal medication.

The several forms of "catarrhal hoarseness" have been considered together before alluding to their treatment, because the therapeutical indications of all vary but little, as far as the larynx proper is concerned. The neighboring cavities implicated naturally require attention of a character peculiar to each, and often paramount in importance.

The first question to be considered is that of rest. As a general rule this is indicated in every case of catarrhal hoarseness, whether mild or severe; for as Michel, of Cologne, states:[6] "Singers who use their voice during a more or less grave disorder almost always cause it to lose some of its brilliant qualities." That this is true, there is no doubt, and our recommendation should be framed accordingly, taking the severity of the local trouble as our guide, as regards the duration of the resting period and its degree. In professionals, however, rest is rarely possible, and as long as a vestige of voice remains they insist upon a continuance of their work. What are we to do in these cases? Without doubt the most advantageous plan to all concerned is frankly to disclose to the patient the dangers incurred; to recommend abandonment of rehearsals; limitation to the smallest degree possible of the part to be sung or spoken; to transpose, when possible, all high notes, or, if this is not possible, to shorten the chest register a couple of tones, thus changing to the head tones without having to throw upon the larynx the strain of the two highest notes of the chest register; in other words, to

5 Semeleder. Rhinoscopie und Laryngoscopie. Wien, 1862.
6 Revue de Laryngologie, d'Otologie, etc., March 15, 1889.

limit as much as practicable the work of the vocal apparatus.

A general point of importance in the treatment of these cases is one frequently overlooked—attention to intestinal action. In female professionals especially, constipation is almost the rule, due, probably, to the irregular attention they can give themselves, their varying diet, and the continued traveling in railroad cars, the last being a very active agent.

Purgatives, even mild aperients, are, for obvious reasons, out of the question. Enemata, while being immediately effective, present the advantage of not diminishing the patient's strength. An enema composed of one pint of lukewarm water and a tablespoonful of glycerine will sometimes be found to act surprisingly not only on the intestines, but on the voice, especially if, as is often the case with traveling artists, the bowels have not been moved for several days. Important also in this connection is the influence of the gastric and hepatic organs in maintaing the catarrhal affection which induces the hoarseness, and to which singers who indulge themselves rather freely are specially liable. An emetic, followed every two hours until the performance by 10 grain doses of bismuth, acts most promptly in these cases.

Taking now the treatment of the catarrhal disorders of the naso-pharynx in the order in which they were described, we will first consider coryza involving the nose proper and the vault. The turgescence of the erectile tissues of the anterior cavity should first be reduced by a local application with a pledget of cotton of a 4 per cent. solution of cocaine. This accomplished, a powder composed of ⅛ gr. of morphia acetate, 1 gr. of bismuth and 1 gr. of sodium silicate is blown into each nostril, taking care to project the powder sufficiently far to include the pharyngeal vault. The walls of the cavities being thus well covered with the sedative powder, a fine spray of liquid cosmoline is thrown over the whole. The procedure should be repeated in four hours, if possible. If fever is present, drop doses hourly of tincture of aconite will usually reduce it markedly, and favorably influence the catarrhal process.

If the nasal trouble be but an exacerbation of a chronic rhinitis, masses of secretion are often the principal cause of irritation. Their removal by means of a coarse spray of a solution of 5 grs. of bicarbonate of soda to the ounce of water assists the other portion of the treatment. When an attack of coryza is of several days' duration, more active means are necessary to bring about an immediate and lasting cessation of at least the occlusion of the nose. An incision with a small galvano cautery knife into the most prominent swellings over the turbinated bodies of one side is of service. The most satisfactory local application to the pharynx in an exacerbation of simple or follicular pharyngitis is a 40 grs. to the ounce solution of nitrate of silver. A solution of this strength acts to a degree as an anæsthetic by causing contraction of the capillaries. It should be applied with a cotton pledget, after thorough cleansing of the surface with a spray of the bicarbonate of soda solution mentioned. Care should be taken to allow none of the solution to fall into the laryngeal cavity. Inflamed follicles, if painful, should be cauterized lightly with a galvano-cautery point, not more than three or four, however, being destroyed at one sitting. The counter-irritation produced by cauterization frequently clears the voice markedly, especially for the same evening. As far as the treatment of the larynx proper is concerned, I can not say that in my hands the ordinary carbolized sprays, Lobell's solution, etc., have given the results claimed by many; in a number of cases, in fact, they seemed to act more as irritants than sedatives. When there is considerable adhesive secretion in the larynx, however, they become useful as cleansing agents. Much more effective in reducing the hyperæmia and, therefore, the turgid condition of the capillaries of the vocal bands, is a solution of resorcin, 7 grs. to the ounce. A stronger solution causes too much dryness; a much weaker is ineffectual. The preparation should be used with an atomizer about every two hours the first day, then three times daily. To enable the solution to thoroughly bathe the bands, the voice should be sounded *during inhalation*, while the fluid is being sprayed in, the bands being thus brought in and forming a floor, as it were, at the lowest portion of the larynx. When the hoarseness is great, an application with the cotton pledget of carbolized iodo-tannin or a solution of perchloride of iron, 20 grs. to the ounce, causes a sudden contraction of the capillaries, which is effectively maintained by the resorcin solution.

When the case is a recent one and is seen early in the day, an insufflation of the powder recommended for the nose (morphia acet., gr. ⅛; bismuth subnit., gr. j., and silicate of soda, gr. j), repeated in two or three hours, will sometimes succeed in aborting it, especially if the powder is well distributed over the laryngeal surfaces, and if a fine spray of liquid cosmoline is thrown over the powder. A thin coating is thus formed over the inflamed membrane, which protects it for some time against the irritating action of the air current. Morphia has a "benumbing" action on the vocal bands, and should not be used within four hours before singing.

Of great assistance in this class of cases, as well as in the muscular variety next to be considered, is the use of coca wine when taken not only a half hour before the performance, but at the end of each act, so as to obtain the benefit of "toning" action when the next act is about to begin. That the "toning" action is not due to

the wine proper, as some believe, is demonstrated by the fact that sherry, the most alcoholic of all wines, does not at all give the singer the smoothness and ease of execution obtained from coca wine; while liquors, such as whiskey or brandy, tend to increase hoarseness if present, or to cause it if it is not. An interesting paper on this subject was recently read before the Société de Médecine Pratique by Dr. Sandras, of Paris, who thought he could ascribe to the use of cocaine or coca, internally or by atomization, cases of aphonia occurring in his practice. That cocaine used locally in any form may produce aphonia, there is no doubt; but that coca administered internally should, is disproved not only by clinical experience, but by our knowledge of the physiological properties of the drug. As demonstrated by Laffont,[7] the action of coca upon the nervous system is one of stimulation, which exerts itself principally upon the constrictor fibres of the sympathetic. The "toning" action of the drug on the larynx is thus clearly explained by the intimate functional relation between the vagus and the formation of the voice, which depends in reality upon the action of the constrictor muscles. That paralysis may be due to overstimulation by coca is negatived by the vigorous condition of the natives of Peru, Bolivia and Colombia, who are, on the contrary, noted for their staying powers, which they ascribe to their constant use of coca leaves. The fact, however, that many of the coca wines on the market are but solutions of cocaine in either sherry or port wine, renders it quite possible that anæsthesia of the posterior portion of the larynx might be caused by contact with the drug during the act of deglutition, and thereby interfere with the functions of the vocal organ. I noticed this effect—a stiffness in the throat—while trying a number of brands to ascertain which would best serve my purpose. The preparation which I selected (Mariani's), made from the leaves, did not produce this effect, owing to the infinitesimal quantity of cocaine that it contains,—gr. $\frac{1}{60}$ to the ounce—all anæsthetic action being furthermore antagonized by the tannic acid present not only in the leaves themselves, but in the claret forming the excipient. A great advantage of coca wine made from the leaves is that it exerts its tonic action without giving rise to constipation. It can for that reason be administered continuously, with much benefit at times, in cases in which muscular weakness causes tremulousness of the voice.

The effect of *impaired muscular motility* upon the proper production of the voice does not, it seems to me, receive the attention it merits. In professionals, especially, it forms an element second in rank only to the inflammatory conditions of the membrane just described, its origin being easily traceable to excess of work in the majority of cases, and to improper breathing during vocalization The necessity of singing every evening, to which comic opera singers are subjected by most managers, is sufficient in itself to account for a number of cases. The forced rehearsals, in addition, play the part of the straw on the camel's back in the majority. The results, of course, depend greatly upon the strength of the singer and his method of vocalizing. Many escape myopathic changes for a number of years and suddenly break down; others experience local fatigue and intermittent hoarseness from the beginning. If we remember the great complexity of the vocal muscle, the thyro-arytenoid, which presents a range of variation perhaps unequalled amongst the muscles of the body,[8] we can well appreciate how easily the slightest dilatation of the capillaries may impede its action. If, again, we consider the multiplicity of its duties, we can readily appreciate how easily congestion may be produced. The other muscles taking part in the constriction of the laryngeal aperture also take part in the general results of the causative elements, whatever they may be; but principally concerned in the production of hoarseness is undoubtedly the thyro-arytenoid. Vascular overdistention at intervals, which gradually become shorter and shorter; capillary engorgement due to paresis of the vaso-motors, or of the unstriped vascular muscles which they furnish, with possible infiltration into the perimysium, is probably the extent of the inflammatory course to which the muscles are subjected, the stage of stasis, etc., being probably never reached. As a result of these changes we have not only interference with their mechanical action, especially in the more delicate functions, but also a certain amount of alteration in their topographical configuration, and an involvement of the areolar tissue around the muscle. The latter complication is probably the ruling element in the production of hoarseness, through myopathic inflammatory changes. Could these pathological changes involve the crico-thyroid and the lateral and posterior crico-arytenoid only, hoarseness would not be caused; but located in the arytenoid and thyro-arytenoid, they produce practically, but to a slighter degree, the mechanical alterations caused by inflammatory disorders of superficial and collateral origin, and the same impediments to the proper juxtaposition of the bands in the formation of tone that result from them. In addition, however, we have the manifestations of deficient muscular action.

Hoarseness of myopathic origin is most frequently recognized in females, possibly because their larynges do not as frequently as in the male present the permanent hyperæmia of the bands which renders a positive diagnosis almost impossible. The larynx shows but little, if any, alter-

[7] Comptes rendus de la Société de Biologie, Dec. 3, 1887.

[8] Human Anatomy, by Harrison Allen. Philadelphia, 1884.

ation from the normal. This, of course, does not apply to paralytic or even true paretic cases, in which characteristic appearances would be present, but to atony of the muscles. The speaking voice is normal. The singing voice is generally alone affected, and that only in certain tones, though weakness pervades them all. The higher tones are generally "lost in the breath," that is to say, the passage of the air through the glottis is much more audible than the note proper, although in a small proportion of the cases the upper portion of the chest register may alone be affected.

The treatment of this condition differs in every particular except one from that of the preceding condition. The exception is the attention to be paid to the gastro-intestinal system, which may be found to be an important element in a small proportion of cases. In emergency cases the voice is sometimes markedly improved by a mild Faradic current, the positive pole being applied behind the larynx below the inter-arytenoid notch, and the negative externally on each side of the thyroid cartilage. The point of the laryngeal electrode should be flattened from before backward and covered with chamois skin. For an external electrode I usually use the thumb and index finger of my left hand, the end of the battery cord being fastened to the palm. In this manner I can make the application with much more exactness over the location of the muscles I desire to influence on each side of the glottis, penetration being secured by frequently dipping my fingers in water. The crico-thyroid and crico-arytenoid are first treated by placing the fingers on each side of the space felt below the thyroid cartilage, and sliding them antero-posteriorly along the groove felt in the deep tissues, the skin which slides over the latter with the fingers being pinched when they are approximated anteriorly. To treat the thyro arytenoid the fingers are merely moved a quarter of an inch higher (just below the lower border of the thyroid), and the same procedure gone through with. The length of the application depends entirely on the ability of the patients to stand the electrode in the larynx. It is generally well tolerated, owing to the fact that it does not enter the laryngeal cavity. Five minutes represents the usual time occupied in such cases. The electrode is introduced a few seconds, then withdrawn, then reintroduced, and so on, great care being taken to avoid touching the base of the tongue. A solution of the hydrochlorate of cocaine can be used to anæsthetize the spot upon which the electrode is to be placed, but the pernicious after-effect of this drug on the voice when the latter is to be used within a few hours renders the use of the drug undesirable.

Internally a pill composed of 1 gr. of quinia and ¼ gr. of nux vomica, administered every two hours, maintains the muscular tonicity throughout the performance, especially when coca wine is taken between the acts, as recommended above. The curative treatment includes the electrical application three times a week, and iodide of potassium, 5 grs., gradually increased to 30, three times daily if the patient can bear it, which he will be much more likely to do if the iodide is administered in a glassful of water immediately after meals, and if three drops of Fowler's solution are given with each dose.

THE VALUE OF INTUBATION OF THE LARYNX, IN CONNECTION WITH OTHER OPERATIONS.

BY MEANS OF CATHETERS, RUBBER TUBING, AND INTUBATION TUBES, WITH METHODS AND DESCRIPTIVE CASES. A NEW SELF-CLOSING INTUBATION TUBE.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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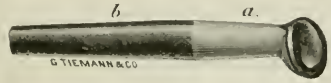
As we advance in our specialty we therefore increase in the number of operations, and there is no doubt that most of those have proved to be a lasting benefit to the world at large. I wish here to add and bring before the notice of this body several new methods showing the use and value of intubation of the larynx in connection with other operations.

My remarks upon these methods will be brief, and by way of illustration will cite a few cases upon which these operations have been performed.[1] The following are some of the operations in which intubation by the above means can be made use of: Post-pharyngeal abscess, laryngeal abscess and cysts, syphilitic adhesion of the larynx by a web, in all operations about the cavity of the month where hæmorrhage is present, cleft palate, in all œdemata about the larynx, excessive hæmorrhages from the tonsils, post-nasal tumors or growths, in the removal of vegetations of the vault of the pharynx, in cases where a hurried tracheotomy is necessary—called by me the combined method of tracheotomy and intubation, previously intubating with a large-size catheter and then performing tracheotomy, thereby gaining time in operating and supplying the necessary air during such an operation. This I have many times performed much to my satisfaction, and must here say that those who ever perform tracheotomy by this mode will never do it otherwise. Every one who has performed this operation knows the amount of risks that one has occasionally to contend with during the stage of passing the tracheotomy tube, etc. In some other operations where a hæmorrhage or apnœa may be present or due to causes which would require a preliminary

[1] As it seems to me that in subjects such as these it is well to confine oneself to those points about which one can speak from experience, and which one has put into practice.

tracheotomy, without interfering with the operating field.

The following are some of the cases in which I made use of intubation of the larynx: Four cases of post-pharyngeal abscess, one case of syphilitic adhesion of the larynx, three cases of combined tracheotomy and intubation, two cases of œdema of the larynx, one case of tongue swallowing during anæsthesia, etc. All these were treated with the most satisfactory results.



The Methods with Illustrative Cases.—1. The first case in which I introduced into the larynx an English catheter was a child 2 years old which I operated upon for a deep-seated post pharyngeal metastatic abscess due to vaccination. The abscess was nearly the size of a chicken's egg, occupying nearly the entire space of the pharynx. It was one of two weeks' standing. The patient was in its last stage, and to operate without some means of keeping up respiration during the operation, which was at that time hazardous, and then taking into consideration the possibility of the pus after the incision passing into the trachea; taking it altogether, the prognosis of this case was not of the most hopeful.

Method of the Operation.—The operation was conducted in the following way: The patient was placed in the ordinary intubation position, a gag was inserted, after which a No. 16 English catheter—or use the largest size that can be introduced in such or other cases, in order to prevent fluids from passing in between the unoccupied space, it should previously be softened in warm water. This was introduced well down into the trachea and then turned the outside end towards the back of the head, thus allowing the assistant to control and guard both the gag and catheter. Immediately after the introduction of the catheter the character of the respiration becomes normal and the patient makes no more resistance or struggle during examination or operation. I waited a few minutes, after which I passed the forefinger of my left hand well down upon the abscess, followed by a laryngeal lancet, opening the same by a deep incision. After the incision the child was at once inverted, and pressure made upon the abscess with the index finger. The throat was thoroughly irrigated with a solution of Ch. Marchand's peroxide of hydrogen, ℥iv to ℥iv of water. This solution I always use in such conditions where pus is present; this has proved in my hands one of the best antiseptic and non-poisonous compounds, and should certainly be highly recommended. From this case I make these deductions:

1. That without catheterization of the trachea the chances of suffocation from the pus flowing into the trachea were imminent.

2. The stenosis which was present and so alarming was immediately overcome, and during the entire operation, by previously establishing normal respiration.

3. Guarding the opening of the larynx by means of a large-size catheter.

4. Gaining of time during the operation, and all struggle for breath was thereby obviated.

The next operation that I wish to illustrate is one of syphilitic adhesions of the larynx which was cured by means of incising the adhesions and the introduction of large-size intubation tubes, thus keeping the incised edges from again adhering to each other, and also dilating the adhesions which were previously incised.

A female æt. 35 years, syphilitic, came under my care for the treatment of a severe stenosis. On laryngoscopic examination an inflammatory syphilitic adhesion was seen which existed between the cushion of the epiglottis by a tight fibrous band uniting the vocal cords along the anterior two thirds of their free border and reducing the glottic chink to the size of a goose quill. The right cord was much inflamed and the side of the larynx generally was thickened, respiration was harsh and whistling but regular during the day; there was much dyspnœa; on slight exercise, at night and during sleep loud stridulous breathing on inspiration.

The examination of the lungs elicited dulness over both apices.

The patient was placed on large doses of the iodides and cold applications to the throat. These conditions of the throat within three weeks' time were much improved. Most of the inflammation disappeared.

Now for the treatment of the cicatricial tissue. Dilatation was tried for three months by means of the O'Dwyer tubes. These were worn for two weeks at a time and then changed for larger sizes. Under this mode of treatment and dilatation the patient showed much improvement. She gained in weight. Her lungs again on physical examination in the second week showed a very marked change. After two months the tubes were discontinued and the patient was discharged. Two months later the patient came again under my notice and complained of her breathing, saying that it was not as free as a month previous. I again examined her by the laryngoscope, from which I learned that the cicatricial web again began to interfere with normal respiration, closing around as before treatment. I concluded from the condition of affairs that it would be best to operate, and thereby if possible give her permanent relief. These were the steps taken for the permanent cure of this case:

This patient was one well trained for laryngoscopical examination and who could stand any

amount of laryngeal manipulation. A good light was thrown upon the operating field, and thereby the entire condition thoroughly explored before any operative procedure was undertaken. A 20 per cent. solution of cocaine was sprayed over the pharynx, post-pharyngeal wall, soft palate and larynx, in order to produce a complete anæsthesia of the entire surrounding localities. A gag was inserted on the left side of the mouth. This instrument should be made use of in all such operative manœuvres, so that one may be able to control the opening of the mouth, and not trust to the patient. An assistant should control the head of the patient against an ordinary head rest. These are the preliminary steps that I generally pursue.

The cutting was done with Lennox Brown's laryngeal dilator with cutting blades. This instrument possesses these advantages over the Whistler cutting dilator: In passing tubes into the larynx many difficulties are encountered, and especially through a cicatricial stricture are much greater than generally stated. This instrument of Lennox Brown's possesses the advantage of being a hollow tube of Schrötter and the cutting dilator of Whistler, so that the surgeon in operating is always sure by the outward passage of air, when the hollow tube is in the larynx, is able to incise with more certainty as to what he is cutting and, moreover, in case of spasm the air passages are not entirely obstructed. A large-size laryngeal mirror is necessary in order to procure a good laryngeal image. The Lennox Brown cutting dilator was introduced with ease and the cicatricial web cut through. The breathing during the introduction of this instrument was momentarily disturbed, after its complete passage normal breathing was carried on through the hollow opening in the dilator. Hæmorrhage was very slight After the incision the instrument was withdrawn and the larynx thoroughly sprayed out. A few minutes later a large-size hard rubber intubation tube was introduced into the larynx and kept there for three days without its removal. Cold applications by means of compresses were used for forty-eight hours with irrigation of the larynx, also spraying with a 10 per cent. solution of cocaine for the relief of pain; this was continued for two days with much relief to the patient. Iodide of potash was again resorted to. Three days later the tube was removed and again replaced. An examination after the first removal of the tube showed a great improvement and healing of the wounded cicatricial web. The cicatrix was diminished, and the size of the opening made by the incision was thus kept open by the continued dilatation of the larger sized tubes, until the edges of the cicatricial tissue were well healed. The time of healing of these edges lasted seven days. The tubes should be worn for two weeks at least after their first introduction. The tube should be removed daily for cleansing. Astringent solutions should be used in spray form for after-treatment. This patient made a complete recovery as the result of this operation. It is now two months since the tube has been permanently removed, and when I last examined the larynx I found the cicatricial web in the same state as after the incision. The patient was in excellent condition and breathing at a normal rate.

This method of treatment seems to me to be of a permanent value as compared with other methods. There is no necessity for a preliminary tracheotomy. The tedious dilatation with dilating instruments for an indefinite length of time, and then with a view of a non-success.

I do not mean to say that every case can thus be treated, but there are cases which come under our notice for treatment where such treatment by this mode I here introduce deserves a trial.

I have used these modes of operating in many such cases which are too numerous to describe here. These two cases by way of illustrating which have just above described and are sufficient to bring before you what can still be expected of intubation of the larynx in connection with other operations.

83 2d Avenue, New York City.

TREATMENT OF MORPHINE HABIT.

BY EMORY LANPHEAR, M.D.,
OF KANSAS CITY, MO.,
SURGEON TO EAST SIDE DISPENSARY.

By the introduction of new remedies considerable change has taken place during the past three years in the management of cases of the morphine habit. My present method of treating is, briefly, this: Upon admission to the hospital the patient is introduced to his special nurse who is to be his constant companion during the succeeding six weeks, and after being made comfortable is given an initiatory bath. He is then requested to give up his instruments and morphine as the physician henceforth is to attend to the administration of the drug; he does this willingly and makes no attempt to concealment if he be in earnest about undergoing treatment—if he be not, cure were better left unattempted. Under no circumstances is the patient humiliated by *searching* the clothing and trunk, as advised by many authors—it is the keynote of dissatisfaction and discord can be the only result; in other words the subject is made to feel that confidence between patient and physician is mutual.

WITHDRAWAL.

After these preliminary steps an assurance is given the patient that he is to be made as comfortable as possible and that the pain will be reduced to the minimum. He is then left to become accustomed to his surroundings, and at the

proper hours the hypodermic syringe is brought into use by the attendant who opportunely makes his appearance just as the patient begins to be uneasy. No attempt at reduction is made the first day in hospital: this encourages the subject, causing him to feel confident of the truthfulness of the doctor in the statement that there will be little suffering. Upon the second day but little reduction is made except at the urgent solicitation of the patient, which is not at all uncommon. On the third day the amount is diminished *one-half* (provided a large quantity is being used—less than one-half if only a few grains are being taken daily); on the fourth day a reduction of one-half, the fifth the same, and so on. Thus if sixty grains be the amount taken, on the second day perhaps fifty grains may be injected; on the third day thirty, on the fourth fifteen, on the fifth eight, on the sixth four, on the seventh two, on the eighth one, on the ninth one-half and on the tenth pure water. Frequently the diminution can be carried on much more rapidly than this; more than once I have run the scale from sixty grains, taken hypodermatically, to nothing within a period of four or five days, but most cases require from seven to ten days for complete withdrawal. Each case must be a law unto itself. Alarming symptoms may demand slowness; happy indications prompt haste. Undue prolongation of withdrawal is to be studiously avoided as it is even more cruel than the abrupt discontinuance of the Levenstein method.

INSOMNIA.

Nothing is given to produce sleep the first night—nothing is needed; the second night the patient is given his last dose of morphine at ten o'clock upon retiring, and this suffices. At eight o'clock on the third night twenty grains of sulfonal are given; the patient then is allowed his second bath and at half-past nine the sulfonal is repeated and an hour later the morphine. During this night the patient will be somewhat uneasy but will sleep fairly well; the next will be a troublesome one, so at 6 P. M. he is given four grains of monobromide of camphor, and the dose is repeated at seven, eight and nine o'clock; at ten recourse is again had to the scruple of sulfonal, and at eleven the same amount is administered simultaneously with the last injection of morphine, the number of injections having now been reduced to two *per diem*—one as late in the day as the patient will permit, the other at bedtime. The next night and the next the same procedure is carried out and, with possibly one night of sleeplessness, from four to eight hours' sleep will be secured each night. The amount of monobromide of camphor is rapidly decreased after three or four nights and as soon as possible the sulfonal is superseded by ammonium bromide, which is also nightly reduced in quantity until nothing is taken. This is usually about the fourteenth or fifteenth day.

DELIRIUM.

Delirium, if it arise, as is frequently the case if withdrawal has been rapid, is met by the hypodermatic injection of one-sixtieth (1-60) grain of hyoscin hydrobromate, repeated in one hour if necessary. A third dose is never given inside of eight hours. In one case (of abrupt withdrawal) where maniacal symptoms arose the same quantity of hyoscyamine sulphate acted kindly, but the other hyoscyamic alkaloid has proven eminently satisfactory in my hands. A brief period of excitement follows its injection, succeeded by a feeling of calmness—even tranquility—which persists from four to twelve hours. I have never had a dangerous symptom from its use and in only once case have I found it devoid of efficacy.

DIARRHŒA.

Under this mode of treatment diarrhœa has not proven the distressing feature that it has in former cases—why, I do not pretend to say, I simply record it as a clinical observation. Salicylate of bismuth has given fairly good results when tried, but most reliance is placed in a mixture of bismuth subnitrate, tannic acid and aromatic syrup of rhubarb in quantities sufficient to control the number of discharges. If there be great pain and tenesmus codeine sulphate added to the bismuth mixture acts charmingly, far better than opium or morphine and with less harm. The "sinking-feeling" at the pit of the stomach is generally amenable to hot fomentations or a belladonna plaster; vomiting, which also sometimes accompanies the diarrhœa, often yields to half-grain doses of carbolic acid in peppermint water, though it usually is not of sufficient importance to demand attention unless it occur after each effort to take nourishment.

PAIN.

One of the most distressing features is "cramps" in the muscles of the leg and thigh and neuralgic pains—particularly sciatica. For this fifteen grains of methozin (antipyrin) is dissolved in sixty minims of distilled water and a half injected over the seat of the greatest pain, the other half close by. A sharp, stinging sensation follows, persisting for a half minute, succeeded by a complete subsidence of the pain. My experience corroborates that of Germain Sée: that in methozin, injected beneath the skin, we have an agent even more powerful than morphine for the relief of nervous pain.

DISTURBANCES OF CIRCULATION.

For remedying this important group of symptoms I have found nothing superior to the well-known lines: food, alcohol, recumbent posture, warmth, friction of the extremities, etc. Milk

punch usually meets all the requirements and cannot be improved upon. Here hot sponge baths, once daily, are useful, and give a sense of comfort. In weak heart digitaline has proven utterly valueless in my practice; atropine is better.

NERVOUS SYMPTOMS.

For the nervous symptoms other than delirium and sleeplessness, *i. e.*, for the general uneasiness and anxiety, I often prescribe:

℞ Tincturæ hyoscyami
Elixir potassii bromidi (N. F.[1]) āā f℥j.
Misce. Sig.: Dessertspoonful three or four times daily —to be gradually diminished.

When convalescence is established tincture of nux vomica affords much satisfaction—five to ten drops in half a glass of water before meals, and an iron tonic is of service one hour after meals.

CONCLUSION.

In conclusion I would say:

1. With these new remedies we pass the "ordeal" of withdrawal far more satisfactorily than heretofore.

2. Many baths are avoided because too weakening.

3. The physician gives each dose himself so that for a day or two after complete suspension of the drug pure water may be injected to relieve the patient's mind.

4. Complete cure (permanent) can be effected much more frequently than authors would lead us to suppose.

5. With competent, trustworthy nurses and hospital confinement it is not a difficult disease to treat.

6. During convalescence the patient is constantly assured of the permanency of the cure—a sort of non-hypnotic "suggestion."

7. Before discharge ample explanation is made regarding the necessity for carefully avoiding the use of the drug for any disease within a period of at least two years.

8. Not the least important element of success is attention to the daily life of the recuperating invalid: nutritious food, abundant exercise, proper sleep, freedom from worry, and to end all a pleasure trip if possible.

No. 8 E. Ninth street.

[1] I make it my rule to prescribe articles included in the National Formulary whenever possible, as far preferable to the "general run" of proprietary goods.

MEDICAL PROGRESS.

EXTIRPATION OF THE SCAPULA WITH PRESERVATION OF THE ARM.—PÉRIER reports the case of a man aged 55 years in which he removed the right scapula. In July, 1889, the patient noticed a small tumor on the right shoulder which by October had reached the size of one's fist; the skin covering it was glossy, tense and discolored. There was no ganglionic enlargement and no pain; the movements of the joint were free and the general health perfect; the case was evidently one of sarcoma requiring extirpation. The acromion and a small portion of the spine of the scapula were first resected; upon examination of the surface of the bone section islets of a dark melanotic hue were seen and it became necessary to remove the entire scapula after detaching the adjacent muscles. A large wound remained, at the bottom of which the head of the humerus could be seen surrounded by the capsular ligament, which was like a narrow prepuce. After arresting the hæmorrhage and using Van Swieten's solution freely the opening of the capsular ligament was closed and the detached muscles were sutured. The cutaneous wound was then united and dressed with salol. The skin mortified at the points where it had been tense but there were no other complications. After completion of cicatricial healing the arm remained suspended from the extremity of the clavicle; its movements were limited but its helplessness was due to the loss of abduction which it is hoped will improve. An examination of the tumor by Toupet showed that it was really a sarcoma, but the little black islands were found not to be due to melanosis but to sanguineous effusion into the sarcomatous tissue. At present there are no signs of a return of the disease.—*La Sem. Méd.*

ERYSIPELATOUS BRONCHOPNEUMONIA WITHOUT EXTERNAL ERYSIPELAS.—MOSNY reports the case of a servant who while attending his master during an attack of facial erysipelas took sick with inflammation of the lungs and died within two days. The autopsy revealed a very circumscribed bronchopneumonia focus from which the author cultivated a streptococcus which was proved by inoculation to be identical with the streptococcus erysipelatos. He regards this as the second case of erysipelatous pneumonia—the first having been described in 1879 by Strauss.—*Cent. für Bak. und Parasitenkunde.*

THE MICROBE OF INFECTIOUS OSTEO-MYELITIS.—LANNELONGUE in an important communication to the *Académie des Sciences* discusses the subject of the microbes of infectious myelitis. From a careful study of this subject he finds that the pathogenic agent is not exclusively the staphylococcus pyogenes aureus, but that the staphylococcus pyogenes albus plays an equally important rôle and that sometimes the streptococcus is the cause of the suppuration. JACONLY and BERTOYE have made similar reports.—*La Province Méd.*

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SATURDAY, MAY 3, 1890.

WHAT SHOULD ENTITLE AMERICAN PHYSICIANS TO THE RIGHT TO PRACTICE MEDICINE?

The American Medical Association, from the time of its organization, has sought to secure the highest practicable standard of medical qualification for the physicians of our country, and, thereby, to give the public the best obtainable skill. THE JOURNAL, in its efforts to reflect the sentiment of the medical profession of the United States, has from time to time presented to its readers the efforts that are being made through our different medical organizations and by State legislation to elevate the standard of medical attainment, and to determine a degree of attainment that should entitle a physician to the right to practice medicine. It has been made manifest that the Federal Government cannot either undertake to educate physicians, or to establish any uniform standard of qualification for medical practice. The courts have, however, decided that the State, under its police power, has a right to legislate for the protection of the lives and health of its people, and thus to enact laws regulating the practice of medicine. But it is not practicable to have any uniform law to govern practice in all of the States and territories, for the demands, professional, physical and social, vary very much. The most feasible plan therefore seems to be for each State and territory to establish for itself, the standard of attainment which will be required to entitle a physician to practice medicine in that State or territory, and, also, to decide how it shall ascertain whether that standard be attained. For that purpose it seems best that each State and territory should have its Board of Examiners charged with the execution of a law, and capable of conducting proper examinations as to qualifications. Such boards should have a right to ignore the possession of a diploma by any applicant, or his claim that the diploma should carry with it a right to practice. Such a course would make American Medical Colleges what they should be, simply teaching bodies. Then a healthy rivalry would develop, not, as at present, to turn out the largest number of graduates but to do the best teaching and to afford the greatest facilities, through thorough equipment, for a liberal medical education and the preferment which such a course would secure for its graduates. The evolution in medical education which has been going on since our colonial days has gradually led up to a conviction now quite general in the profession, and with the public, that teaching and licensing to practice ought no longer to be united in any medical college.

That it has been possible to regulate satisfactorily, by the State, the practice of medicine through properly constituted medical boards charged with the execution of laws passed by the State for that purpose has been demonstrated in several States. Illinois was one of the first. Although its early efforts were only partially successful, through imperfections in the law and inexperience in its enforcement, yet much good has resulted, through the judicious course pursued by the board charged with the enforcement of the law. The greatest defect of that law lies in its recognition of a diploma from a medical college which the board recognizes as "in good standing," and entitling the possessor of it to a certificate from the board without examination which, on its being recorded, entitles its possessor to the right to practice medicine in the State of Illinois. Whilst the law's restrictions have done much for the cause of higher medical attainment, a still greater gain would probably be made if the State should so amend the law that all diplomas should be disregarded and all applicants for license should be subjected to the same examination in all of the essentials of a medical education, regardless of the source from which the knowledge came. The State of Minnesota has

enacted a law which, whilst doing much good for the people of the State and aiding the cause of higher medical education, is perhaps unnecessarily stringent in that it requires that an applicant for license must have a diploma, and from an institution which complies with the requirements of the law of that State. A board which is qualified for the responsible duty which devolves upon it, should be able to pass reliably upon the candidate's attainments, irrespective of his possessing a diploma and regardless of the source of his knowledge.

If at the conference of medical colleges, which it has been proposed should be held in Nashville at the time of the next annual meeting of the American Medical Association, steps can be taken in the direction of efficient legislation by more of the States to govern the practice of medicine, more good will be accomplished than by trying to establish any uniform system of teaching medicine in the different medical colleges of the country, or of requirements for graduation; for many of the smaller colleges, being without proper equipment for teaching, and without adequate clinical resources, should only be regarded as preparatory medical schools, not as colleges which should grant diplomas. The adoption by all of the States of such a plan of regulating the practice of medicine within its limits would have several advantages, in that it would require all applicants to be subjected to the same examination upon all essentials in practice, and disregarding sectarian views relative to therapeutics as of secondary importance. One effect of this would be a tendency to unification of teaching and practice, and doing away with so-called sectarian schools and obviating any supposed necessity for "mixed boards." By recording on the certificates the grade attained on the established scale of numbering, that certificate, when registered by the county official as required, would enable the public to ascertain the result of the examination, and thus to form some idea of the physician's attainments, which they now find it very difficult to do, and find that they have to content themselves with the vague assurance that the physician has "a diploma." With the record a public one, which the physician knows, and with a right to have subsequent examinations and a higher rating, an incentive would be given for further study and greater attainment than is now felt by many who are content with having "a diploma," which is regarded by them as an all-sufficient passport which obviates any necessity for further study. The advantages and the inducements for further study, as shown in the second examination required in the medical corps of the Army, the Navy and the Marine-Hospital Service render it probable that, in civil practice a hope of greater reward for increased proficiency would not be without good result in these days of active competition in the over-crowded medical profession. Since the medical colleges, after long-continued efforts to remedy the evils incident to licensing to practice medicine, have been unsuccessful, the great hope of the public and of the medical profession seems to lie in judicious legislation by the States. The members of the American Medical Association, the most representative body of medical men in the United States, can do much to influence wise and just legislation in the States that have not already enacted laws to regulate the practice of medicine. If the Association, at the Nashville meeting, will continue the effort which it has been making, and its effort should be supplemented by the proposed conference of medical colleges at that time, further impetus may be given in the direction of more and better legislation by the States to regulate the practice of medicine, and to determine what shall entitle a physician to the right to practice in the State in which he resides.

STANDARD PREPARATIONS.

No more important matter will be brought to the attention of the Committee on revision of the United States Pharmacopœa, to meet in a few days, than the proposed adoption of standard preparations. The adoption of standard (or "standardized") preparations would require that all manufactured articles should be made from crude drugs of known strength, as determined by assay.

The pharmaceutical profession is divided on the subject, and to many of its members there seems to be a financial aspect of the subject which is more to be regarded than all others. The manufacturing pharmacists on the one hand advocate the adoption of standard preparations as a just measure, and one that is calculated to increase their revenue; but the dispensing drug-

gists oppose it as impracticable. That it is impracticable to many of the dispensers, there can be no doubt, for there are perhaps comparatively few who are competent to make a correct assay of organic drugs. To those who are competent it is objectionable in the great expenditure of time it would require of them, and in the fact that there are many preparations in which absolute accuracy of strength is not essential. That the measure is practicable, however, is sufficiently demonstrated by the fact that some of our manufacturing pharmacists have used none but assayed drugs for a period of several years. We are pleased also to see that PROF. C. T. P. FENNEL, of Cincinnati, a member of the pharmaceutical committee on revision, and one who is a dispenser and not a manufacturer, strongly urges the adoption of standard preparations, in an article contributed to the January and February numbers of the *American Druggist*.

To the medical profession the question is simply: Shall we insist upon receiving the best that can be dispensed, or shall we put up with what we have? The mere hint that our prescriptions can be filled with greater accuracy than they at present receive, should be cause sufficient for earnest demands for improvement. Who can tell the dose of aconite, belladonna, digitalis, gelsemium, or of a host of other medicines? Much valuable time is often lost in ascertaining the quantity of a given preparation that is necessary to obtain a required effect. Individual idiosyncrasies are of course met with in patients, but they are not to be compared in frequency with the uncertainty, even dangerous variations, in the strength of medicines. An editorial in the journal just referred to opposes the adoption of standard preparations because there are certain drugs, among them digitalis, whose active principle has not been definitely determined, and others whose assay is not positive, and yet others in which absolute accuracy is not necessary. We note that one of our prominent pharmaceutical journals in a succession of issues, vehemently opposes the measure on no higher than financial grounds. But the physician, when he sends his prescription to the apothecary, has a right to demand that it shall be compounded of drugs whose action is equal to that which he has learned to expect from them, and he should not be intimidated by the fact that there is some doubt as to the identity of a certain alkaloid, or as to the best means of assay; much less by the pecuniary interests of the apothecary, whose interests he is, as a rule, under little obligation to respect. It is solely a matter of justice to the patient, as well as to him who prescribes.

Fortunately, the interests of the medical profession will be ably supported in the committee by the gentlemen who were appointed to represent the American Medical Association at the last annual meeting.

REFLECTIONS OF A BELGIAN VISITOR.

Americans who find everything European superior to what we enjoy at home will do well to read the letter published by a Belgian physician in the *Gazette Médicale de Liége* (February 20, 1890), after a visit to this country. The letter closes as follows: "It cannot be denied that as regards hospital accommodations (to say nothing of other matters), young America has surpassed most of the old countries. What is the talisman that has so quickly produced such wonders in America while we, with no end of talent and desire, must struggle painfully along, and be satisfied often enough with a shabby result? We leave to others the task of solving this problem, merely observing that the absolute liberty of inception that prevails is sufficient to account for a large part of the results obtained. Whatever it may be, after viewing such public benefactions as these one turns to Belgium and is unable to restrain a feeling of sadness. What would not the worthy men who direct our own clinics accomplish if they had at their disposal but half the facilities and resources which are so freely offered in America! But we have the chaos of our restrictive laws, our superannuated regulations, our despotic administration, and under the paternal eye of our *Etat Providence* our bureaucrats find it difficult enough to live in peace!"

EDITORIAL NOTES.

MEDICAL ASSOCIATION OF MISSOURI.—The thirty-third annual meeting of this Association will be held at Excelsior Springs, Clay county, Mo., May 6, 7 and 8, 1890. Reports may be expected on scientific subjects from the following committees and sub-committees: Surgery, Medicine, Education, Respiratory and Circulatory Or-

gans, Obstetrics, Gynecology, Neurology and Psychology, Ophthalmology and Otology, Dermatology, Abdominal Surgery, Railroad Surgery, State Medicine, Diseases of Children, Collective Investigation, Anatomy and Physiology, Genito-Urinary Organs. Members are urged to be active in inviting their medical friends to become members. Many will receive a number of notices, which they are expected to send to friends. The medical men of Kansas are invited to be present.

RAILWAY FARES.—We are advised by Secretary Atkinson that through tickets to Nashville are not sold on several of the roads over which members will travel when attending the annual meeting. For the benefit of those of our members who desire to secure special rates upon return tickets we offer the following suggestions:

First.—Let each member, when he purchases his ticket, be sure to obtain from the *ticket agent* a certificate to the effect that he has paid full fare for the distance for which that ticket is issued. If he is obliged to purchase more than one ticket, let each certificate cover the mileage for which the ticket is issued.

Second.—These certificates must be presented to Secretary Atkinson at Nashville and receive his signature.

Third.—Certificates thus countersigned can be presented at the various railroad offices and return tickets will be issued at one-third rates.

POST-GRADUATE MEDICAL SCHOOL OF CHICAGO.—Drs. Charles Warrington Earle, Sanger Brown, Dudley C. Trott, Weller Van Hook and Ernest Lackner, have recently been elected to the Faculty of the Post-Graduate Medical School, in the following departments: Dr. Earle, Professor of Obstetric Operations; Dr. Brown, Professor of Mental and Nervous Diseases; Drs. Trott and Van Hook, Professors of Surgery; and Dr. Lackner, Professor of Diseases of Children. The Faculty will entertain the members of the Illinois State Medical Society with a lunch at Kinsley's on Tuesday evening, May 6, 1890.

DR. FELIX WOLFF, of Hamburg, has been entrusted with the medical management of the celebrated Sanatorium for Consumptives founded at Görbersdorf, in Silesia, by the late Dr. Brehmer. Dr. Wolff was for a long time chief assistant to Professor Curschmann, of Leipzig, and may justly be considered fully capable of conducting and augmenting this valuable institution, so justly famous throughout all Germany.

REGISTRATION IN MASSACHUSETTS.—The Massachusetts Legislature has at present under consideration a bill requiring the registration of physicians, and providing by fine or imprisonment, or both, for the punishment of those who without license shall permit the title of Doctor to be used in connection with their names. The bill is certainly in the interest of the people, and for their protection it should become a law.

ILLINOIS STATE MEDICAL SOCIETY.—The Committee of Arrangements have completed their preparations for its fortieth annual meeting, which is to convene in Chicago on May 6. On Tuesday, in addition to the morning and afternoon sessions, a lunch will be served from 6:30 to 7:30, after which prominent neurologists will discuss a paper to be presented by Dr. E. Ingals, upon the subject, "What Shall We Do with our Insane?" On Wednesday, after two sessions, the local profession will tender a lunch at the Auditorium, and an opportunity will be given to inspect this magnificent building. On Thursday two sessions will be held for the hearing of reports, the discussion of papers and the transaction of miscellaneous business.

TULANE UNIVERSITY, NEW ORLEANS.—Ninety-three students graduated at this institution at the annual Commencement, which occurred on April 1.

THE PITTSBURGH PHYSICIANS.—There is a movement among the physicans in Pittsburgh to pool their offices, if not their patients. They propose to erect a ten-story building, to be occupied by physicians only, who will thus have their offices in close proximity. Whether the project shall prove defensive or offensive remains to be seen.

FOOTBALL CASUALTIES.—The London *Lancet* contains an analysis of the football casualities during the winter season of 1889–90. By it there have been not less than thirteen deaths referable to this dangerous sport. The list of injuries, other than fractures, includes three of the spine and two of the knee or ankle. Of fractures there were thirty in all, of the collar-bone eleven, arms four, and legs fifteen. These are the cases that have found their way into the papers, but there are doubtless many others that are not reported in any way.

TOPICS OF THE WEEK.

GERM ANTAGONISM.

We shall not use the term germ in accordance with the strict definition of the same, but in accordance with its generally accepted use in relation to disease, meaning to embrace the source of all organic life in its various forms from the embryo up through the progressive stages of development, through which it may influence other living organisms.

The term life is a very comprehensive one when applied to the species or individual, for the known species of the universe visible to the naked eye alone in the fauna and flora are numbered by the hundreds of thousands. Then the species of the microscopical world are equally numerous, only they have not all received their name.

Then, as we grope on into that great and mysterious darkness, into which the microscope, endowed by human ingenuity, has, as yet, been unable to fathom, and there count the untold influences which, when combined under right circumstances, give distinct results as specific as any of the species of the visual world, then can we begin to comprehend the extent of *life*.

These so-called unseen combined influences, which are the cause of the specific results, when summed up are but germs with another name, either in their development in the grades upward in life, or downward in death. Thus, as we contemplate life we dwell upon death, for out of life comes death, and from death life gathers sustenance.

Is it not so that life devours life? or, in other words, feeds upon what has been created by life, and the cycle is completed where death joins life?

Let us, then, divest ourselves of the thoughtless idea that there is no life beyond our present power to examine; for who is prepared to say but that there is, and may yet be found, in the pre-microscopic world or the mystic realm unseen, the germs peculiar to itself and distinct in its nature, that give rise to certain effects denominated disease?

We say not that all germs produce disease any more than all seeds produce thistles or other noxious weeds; but as the microscopical world is opened to us we become aware that we are continually surrounded by germs of many varieties.

Miquel, for instance, has found that the ordinary atmosphere of a large city contains over 2,000 bacteria per cubic yard, while the air of the room of an old house in winter will show bacteria to the amount of 4,500 per cubic yard, and again that the wards of a long-used hospital will hold as many as 90,000 germs in the same space.

Observation seems to show that the different varieties require different conditions for development, each species varying in its susceptibility to different influences.

That certain diseases are epidemic or endemic undoubtedly depends upon the local and atmospherical influences which favor the development of those specific germs, and also on some influences producing in the system a condition or soil especially favorable for their reception. Or it may be that the local influences have multiplied, or permitted to multiply, the specific poisons or germs, to such an extent that the myriads in defiant hosts settle down upon and infect the unfortunate being, giving rise to the special symptomatology. It is probable, therefore, that we must have both the presence of the specific germs and also a fit condition of the system for their development.

For persons of good constitutions, and sometimes constitutions not entirely healthy, may pass through epidemics untouched, while others of a debilitated or of a certain condition, will be quick to receive or develop the disease.

It would no doubt astonish us if we could know how extensively the poisons that exist around and come in contact with us in different ways are resisted, rejected and overcome by the human organism.

That these poisonous influences are of a specific kind and give rise to a specific disease, is just as probable as that the germ of an oak acorn will grow an oak, instead of a pine, or that the germ of the wheat will produce wheat, instead of oats.

What are the diseases scarlatina, pertussis, diphtheria, but the infested human system overpowered by the rapidly reproduced specific poison peculiar to each respectively, and that these germs have only to exhaust the soil to become extinct, or, in other words, terminate the disease? Facts have been adduced which prove conclusively that the morbid poisons, whatever their form or classification may be, act in all cases not capriciously, but according to certain definite and fixed laws. Mingled with the blood yesterday, to-morrow, after having had a period of latency, swarming into innumerable myriads, possessing the whole field as a pest, devouring everything before them; in short, passing through the various stages of transition, germination, growth, maturity, and finally death.

Such are the remarkable laws of morbid poisons that many of them possess the extraordinary property of exhausting the constitution of all susceptibility to a second action of the same poison, as is the case with syphilis, scarlatina, measles, typhoid fever, small-pox, whooping-cough, and indeed with a considerable number of others. And in fact temporary protective influence is imparted by most all morbid poisons, for few persons suffer a second attack of the same specific epidemic disease, and at least the susceptibility of the constitution is temporarily impaired.

These morbid poisons or epidemic influences are now nearly, and soon probably will become, entirely synonymous with the term germ, as used in its ordinary broad meaning.

But that some of the numerous organic forms are actually necessary cannot be intelligently disputed; for, as Sir William Roberts says: "Without saprophytes there could be no putrefaction; and without putrefaction the waste materials thrown off by the animal and vegetable kingdoms could not be consumed. Instead of being broken up as they are now, and restored to the earth and air in a fit state to nourish new generations of plants, they would remain as an intolerable incubus on the or-

ganic world. Plants would languish for want of nourishment, and animals would be hampered by their own excreta, and by the dead bodies of their mates and predecessors. In short, the circle of life would be wanting an essential link. A large proportion of our food is prepared by the agency of saprophytes. We are indebted to certain bacteria for our butter, cheese and vinegar. Our daily bread is made with yeast, and to the yeast plant we also owe our wine, beer, and spirituous liquors."

This tiny cell, as a generator of alcohol, plays a larger part in the life of civilized man than any other tree or plant.

It is not necessary to look to that extreme of spontaneous production, for these germs readily enough multiply when they find the desired soil. They may exist either upon or in plant or animal, and be transmitted or communicated indifferently from animal to man or man to animal, or from vegetable to animal. For plants, as well as animals, have their peculiar parasites and parasitic diseases. They may be either vegetable or animal. The oak, apple or gall nut is a familiar example of the large animal parasite affecting a plant. Then there are the blights, mildew, smut, brand and other forms of fungi that are capable of propagation and transmission.

Yet each species is affected more particularly by its particular parasites, and these are themselves affected by their own parasites, and so on almost indefinitely, each one antagonized by some other. This series might be continued on down through the microscopic field into that which has not yet been explored, and including those influences or germs that affect the human organism in such a manner as to cause the condition we call disease; for who can dispute but that all infectious, epidemic, endemic and malarial diseases are but the result of a special multiplying parasite or microphyte infecting the blood or tissues of the body. That these special germs do not always multiply or develop, causing disease, is no more a cause of wonderment than that of germs of a higher order of life do not always find lodgment in a soil adapted for their development.

The seed of fireweed, for instance, may pass over hundreds of acres of tilled soil and miles of forest before it finds a suitable place prepared by fire for its growth. So, too, small-pox germs may be present, and some systems be very indifferent to their reception, because the soil is not just right. So, also, there is the inherent power of all organized life to resist oppression.

The power of the human system to resist poisonous influences is something remarkable; yet, when infested by rapidly multiplying hordes of life, it often succumbs for a time; or, in other words, the system is overpowered until the soil is exhausted and the germ dies for want of food, or is swallowed up by other germs.

And so we are only to stop and reflect of the many ways in which the body is beset by these antagonizing germs—the air we breathe swarming with its clouds of life, the food we eat and the water we drink permeated in every particle, and the primordial cells, whenever uncovered by accident or the surgeon, sought after with an insatiable and rapacious appetite by these mysterious beings—then we may begin to comprehend the unlimited power that relentlessly antagonizes back to the mother dust.—Wilder, *Times and Register*.

HUMANITY AND CONSTITUTIONALITY OF ELECTRICAL EXECUTION AFFIRMED.

On March 21st the Court of Appeals at Albany unanimously affirmed the judgment of the courts below, in the Kemmler murder case, declaring the Electrical Execution as constitutional, and holding that no error was committed on the trial of the accused. Kemmler, being in the custody of the warden of State-prison at Auburn, had applied for a writ of habeas corpus, claiming that he had been sentenced by the court of Oyer and Terminer to undergo a "cruel and unusual" punishment, contrary to the Constitution of the State and of the United States, and was threatened with deprivation of life without due process of law by reason of such illegal sentence and judgment of the court.

The Court of Appeals, through Judge O'Brien, now finds that: "the mode proposed is not cruel within the meaning of the Constitution, though unusual. On the contrary, all the judges agree with the court below that it removes every reasonable doubt that the application of electricity to the vital parts of the human body, under such conditions and in the manner contemplated by the statute, must result in instantaneous and consequently painless death."

On the same day that the decision of the Court of Appeals was announced, Judge Martine in the Court of General Session sentenced a murderer by the name of Slocum, a former professional base-ball player, to be executed at Sing Sing prison early in May in accordance with the provision of the new law.

A DEFINITION OF "UNPROFESSIONAL CONDUCT."

In a bill to regulate the practice of medicine, recently introduced in the Oregon Legislature, there is a clause providing for the revocation of licenses for "unprofessional conduct," which is defined in the bill as follows: First, the procuring, or aiding or abetting in procuring; a criminal abortion. Second, the employing of what are known as "cappers" or "steerers." Third, the obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured. Fourth, the wilfully betraying of a professional secret. Fifth, all advertising of medical business in which untruthful and improbable statements are made. Sixth, all advertising of any medicines or of any means whereby the monthly periods of women can be regulated or the menses reëstablished if suppressed. Seventh, conviction of any offense involving moral turpitude. Eighth, habitual intemperance.—*N. Y. Med. Record*.

ALCOHOLISM AND DISEASE.

Dr. Krafft-Ebing, of the University of Vienna, recognized in Europe as authority, thinks that no proper legal measure should be neglected that may combat intemperance, and that the formation of societies to counteract it should be urged. He declares that in 29 per cent. of all cases, intemperance is found to be the sole or chief cause, and in 30 per cent. more one of the causes, of mental disease.

PRACTICAL NOTES.

STROPHANTHUS.

Strophanthus is a most excellent remedy, especially where we have to deal with cardiac complications, such as fatty degeneration, dilatation, or the weakness which occurs in the course of long-continued diseases, as typhoid, phthisis, and in pneumonia. In these cases much of the depression is due to the accumulation of carbonic acid in the blood, which is not thrown off by reason of the depressed condition of the circulation; the shortness of breath of which these patients complain may be overcome by the administration of a cardiac stimulant. Diffusible stimulants like ammonia and alcohol are not always at hand, and we have no remedy which is so well calculated to arouse the drooping faculties through the instrumentality of the heart as strophanthus. Nux vomica is also a valuable cardiac stimulant, but its influence is more general and less direct upon the heart, while digitalis is a drug which, if long continued, defeats the very purpose for which it is used. The initial effect is that of a cardiac stimulant, but it carries with it indirect or secondary effects which will destroy the influence we desire to produce. Digitalis causes a contraction of the finer vessels of the arterial system, and, in order to overcome this effect and secure a more perfect distribution of the blood throughout the tissues, the force of the heart must be greatly increased. Now, while digitalis increases the power of the cardiac muscle, the general effect of alcoholic preparations, as I have previously explained to you, is one which is not altogether desirable. Strophanthus possesses the advantage over all others in producing immediate and continued effects upon the cardiac muscle; when given in the form of a reliable tincture, but a few minutes will elapse before the action of the drug will be apparent upon the circulation, and this effect will last for some time. When used hypodermically, the effect upon the heart, as shown by sphygmographic tracings, will be noticeable for several days or a week. The judicious employment of this drug will often be the means of saving life by tiding over instances of great depression which are liable to occur in the course of serious diseases. Five drops of the tincture may be given in a little water, and the dose repeated in urgent cases in the course of one or two hours.—Aulde in *N. Y. Med. Journ.*

PORRIGO DECALVANS.

M. Brocq prescribes the following local treatment for porrigo decalvans. After shaving the head the scalp is washed with hot soap and water. After epilation of the affected regions, they are washed with a $\frac{1}{500}$ or $\frac{1}{250}$ solution of corrosive sublimate. A few hours later the following ointment is rubbed in: ℞. Hog's lard, 30 grams; oil of sweet almonds, 4 grams; glycerine, 4 grams; hydragyrum vitriolatum, 1 gram. The sublimate lotions and the ointment are applied mornings and evenings. Epilation is repeated three or four times. M. Brocq sometimes also uses the following lotion: ℞. Water, 400 grams; glycerine, 100 grams; corrosive sublimate, 1 gram. M. Vidal applies a lotion of essence of turpentine to the scalp, then tincture of iodide, and finally rubs a thick layer of vaseline over the parts, which are then covered with gum plaster or laminated gutta-percha. M. Lailler, after epilation, applies frictions of the following preparation with a piece of linen: ℞. Water, 950 grams; glycerine, 50 grams; bichloride of mercury, 1 gram; hydrochlorate of ammonia, 1 gram. The linen which has been used for the frictions is placed on the head, which is then covered with a cap. The scalp is washed once a week. The treatment lasts from twelve to fifteen months. M. Besnier, after epilation, washes the head daily with warm water containing $\frac{1}{50}$ of boric acid and soap. The affected spots are rubbed every evening with vaseline, to which a very small quantity of acetate or sulphate of copper (0.50 to 1 per cent.) is added. If the scalp shows signs of inflammation $\frac{1}{10}$ of boric acid is added to the vaseline instead of the copper.—Paris Corr. *British Medical Journal.*

CODEINE IN OVARIAN PAIN.

Dr. Freund, of Strassburg, has recently used codeine in a large number of cases of abdominal pain from various causes, with the view of testing the assertions of Dr. Brunton that the drug is of especial use in intestinal or pelvic pain. His results seem to indicate that Brunton's views are somewhat exaggerated.

Pain from acute uterine affections, such as dysmenorrhœa, Freund found, was not as quickly relieved with codeine as with morphine, and the relief was of shorter duration. In pain from pelvic exudates and tubal disease the drug was also of but little value. In ovarian pain, however, whether from prolapse, oöphoritis, perioöphoritis, or neuralgia, the relief afforded by codeine was prompt, unmistakable, and more or less permanent even when small doses were given. The amount usually administered was about half a grain three times daily in pill form, and in but few cases was it necessary to increase this quantity. His experience coincides with Brunton's that no disagreeable or harmful effects follow the use of the drug. It does not stupefy, diminish the appetite, nor constipate. He prescribes the pill for one month after an attack of ovarian pain, and warmly recommends the drug for the above conditions.—*Therapeutische Monatshefte*, November, 1889.—*Medical News.*

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Experiments demonstrating that Physical Fatigue is a powerful factor in the Production of Infectious Diseases—The Etiology of Asthenopia—Treatment of Endometritis by the Curettage of the Uterus—On Spontaneous Fracture in Tabetic Subjects—A Formula for an Antiseptic Paper.

In a note by Drs. Charrin and Roger published in the *Revue Scientifique*, the authors endeavored to afford experimental confirmation of the generally received view that physical fatigue is a powerful factor in the production of infectious disease. They subjected a number of white rats to severe exercise (running in a rotating cage) for four consecutive days, at seven hours each day. Eight of these tired out animals were then inoculated with attenuated anthrax virus, four animals in a normal condition of health being inoculated with the same virus at the same time, in order to serve as a standard of comparison. The result was, that seven of the eight animals belonging to the first series succumbed, while all the animals of the second series survived. They thus explain the curious tendency of epidemics to break out among soldiers during great manœuvres and on campaign, and they urge that many a soldier is rendered susceptible to disease by fatigue who would otherwise have escaped.

In the *Journal d' Oculistique*, Dr. Fano has published a note on the etiology of asthenopia, or rather on a point connected with the idiopathic or essential form; that is to say, that which is not accompanied by any alteration whatever appreciable with the ophthalmoscope, whether in the refractory media, or in the deep-seated membranes. Asthenopia generally affects young subjects, those who are obliged to exercise their eyes for a long time on small objects. Ophthalmologists are not in accord on the nature of asthenopia. Some consider it as the result of a lesion of the nervous substance of the retina, while others consider it as a fatigue of accommodation for the vision of near objects. Dr. Fano classes himself with those of the first category. Besides the excessive work of the eyes producing a progressive weakening of the nervous influx of the retina, there are three other causes, having the same mode of action, and producing asthenopia, without excessive work of the organ of vision, viz.: venereal excesses, onanism and seminal losses. Dr. Fano concludes his note with the recommendation that when one is consulted by subjects affected with asthenopia, and if no explanation of the affection is to be found in the anatomical state of the eye as revealed by the ophthalmoscope, nor in the troubles of refraction, nor in the profession followed by the subject, trouble of the genital functions should be sought for. In combating these troubles, one would often cure a disease of the eye which had resisted a great number of external and internal medicaments.

At a recent meeting of the Société de Chirurgie, Dr. Bouilly read a note on the treatment of endometritis by the "curettage" of the uterus. The author gave the results he obtained since 1887. He practiced eighty-one curettages and he was able to follow sixty-nine cases, forty-five of which were in the town and thirty-six in the hospital. His rule of practice is, if there exists a complication of ectropion of the neck, or any lesion of the annexes, he would practice curettage only if a more radical operation had been performed, and he reserves the curette for endometritis accompanied with metrorrhagia, muco-purulent discharges, and severe pains. After anæsthesia, he dilates the neck in four hours with laminaria and, after scraping the interior, he paints it with the tincture of iodine, creasoted oil or the chloride of zinc. At the end of four days, he withdraws the vaginal tampons and commences antiseptic washings, unless there are still stains on the dressing, in which case he continues them. Of the sixty-nine cases, he had thirty-nine cures, and the results were more striking in hæmorrhagic metritis. In glandular endometritis he says it is preferable to amputate the neck, as the curette cannot scrape the bottom of the hypertrophied cul-de-sacs. If the annexes are diseased, curettage is insufficient. Dr. Bouilly concluded his note with the remark that curettage of the uterine cavity alone is the best procedure. In certain cases where there is a commencement of salpingitis, curettage or scraping sometimes gives good results. But if the discharges are under the depeudence of a disease of the ovaries, these must first be removed.

In the *Gazette des Hôpitaux*, Professor Verneuil publishes a note on spontaneous fracture in tabetic subjects. The note was founded on a case under his care of painless bimalleolar fracture in the leg of a tabetic woman. He objects, however, to the term spontaneous and prefers that of pathological fracture, as no bone would break unless subjected to pressure or blows from without, or to strong muscular contraction. Fracture in tabetic subjects occurs most frequently in the lower extremities, whilst in other forms of general osseous fragility, it occurs with equal frequency in both the upper and lower limbs. In tabetic fracture the larger bones are more frequently broken. In thirty-eight collected cases the fracture occurred seventeen times in the femur, ten times in the bones of the leg, six times in the bones of the forearm, and thrice in the clavicle. In nearly 50 per cent. of cases of tabetic fracture more than one bone is broken, the number varying from two to eight. In consequence of the usual absence of pain, the fracture of tabetic subjects is often

overlooked. Notwithstanding advanced pathological changes in the osseous structures, this form of fracture, especially when involving the diaphysis of a long bone, consolidates quickly, and with the formation of abundant callus.

The following formula for an antiseptic paper, published by the "Formulaire Mensuel," may be found useful: Bichloride of mercury, 20 grams; glycerine, 50 grams; distilled water, 1,000 grams; filtering paper, q. s. The paper should be soaked in the liquor, then dried and cut into small bands for the dressing of wounds. A. B.

AMERICAN MEDICAL ASSOCIATION.

List of Officers and Preliminary Programme of the Forty-first Annual Meeting,

To be held at Nashville, Tenn., May 20, 21, 22 and 23, 1890.

GENERAL OFFICERS.

President—E. M. Moore, M.D., New York.

Vice-Presidents—J. W. Jackson, M.D., of Missouri; H. H. Kimball, M.D., of Minnesota; J. H. Warren, M.D., of Massachusetts; T. B. Evans, M.D., of Maryland.

Treasurer—Richard J. Dunglison, M.D., lock box 1274, Philadelphia, Pa.

Permanent Secretary—Wm. B. Atkinson, M.D., 1400 Pine St., Philadelphia.

Local Secretary—G. C. Savage, M.D., Nashville, Tenn.

Librarian—C. H. A. Kleinschmidt, M.D., Washington, D. C.

Chairman Committee of Arrangements—Wm. T. Briggs, M.D., Nashville, Tenn.

The general Committee of Arrangements has very fully matured its plans. A social entertainment will be given at the Capitol on Tuesday, May 20, the first day on which the Association is to convene. We are advised that there are hotel accommodations for twenty-five hundred guests. The morning sessions will be held in the Vendome. The several Sections will be located in various halls convenient of access. At a point so central and so accessible there should be a full representation from all sections of the country. Not less than two thousand members should register at Nashville.

ADDRESSES AT THE GENERAL SESSIONS.

On General Medicine, by N. S. Davis, of Chicago, Ill.

On General Surgery, by Samuel Logan, of New Orleans, La.

On State Medicine, by Alfred L. Carroll, of New York.

PRELIMINARY PROGRAMME OF SECTIONS.

Section of Surgery and Anatomy.

Chairman—B. A. Watson, Jersey City, N. J.

Secretary—J. B. Deaver, Philadelphia, Pa.

1. Report of Several Cases of External Surgery of the Nose with Photographs, by Merrill Ricketts, Cincinnati.
2. Two Cases of Resection of Cæcum for Carcinoma with Remarks on Intestinal Anastomosis, by N. Senn, Milwaukee.
3. Left Inguinal Colotomy with Remarks upon other Operations, by J. McF. Gaston, Atlanta, Georgia.
4. Continuous Silk Suture for Wounds of the Intestine, with Experiments, by C. L. Lewis, New York.
5. The Management of Major Amputations, by John A. Wyeth, New York. Drs. Hunter McGuire and B. A. Watson will open the discussion.
6. Report of Cases of Hernia Relapsing after Different Methods of Radical Cure, by W. T. Bull, New York.
7. The Technique of Hysteromyomectomy, by Howard A. Kelly, Baltimore, Md.
8. The Dark Side of Supra Pubic Cystotomy with a Report of Cases, by H. O. Walker, Detroit, Mich.
9. John B. Deaver, Philadelphia.
10. The Necessary Peroxide of Hydrogen, by Robt. Morris, New York.
11. Excision in Irreducible Dislocation of Hip, by Charles Penrose, Philadelphia.
12. A Plea for Early Abdominal Section in Intestinal Obstruction, by J. G. Carpenter, Stanford, Ky.
13. Novel and Ideal Method of Knee-Joint Excision and Exploration, by T. S. K. Morton, Philadelphia.
14. Surgical Treatment of Biliary Obstruction, by Henry O. Marcy, Boston.
15. Joseph Price, Philadelphia.
16. Joseph Hoffman, Philadelphia.
17. R. H. Harte, Philadelphia.
18. Shot Wound of the Intestine with Report of Cases, by David Barrow, Lexington, Ky.
19. Operation of Radical Cure of Hernia in Early Infancy, by Thomas H. Manly, New York.
20. Paper on New and Improved Surgical Pump, by Elmer Lee, Chicago.
21. Treatment of Flat-Foot by Thomas' Method, by W. R. Townsend, New York.
22. Report of Gun Shot Wound of Brain, by J. Lee McComas, Oakland, Md.

Section of Obstetrics and Diseases of Women.

Chairman—Wm. Warren Potter, Buffalo, N. Y.

Secretary—Joseph Hoffman, Philadelphia.

1. Intra-Ligamentary Cysts, by W. H. Wathen, Louisville, Ky.
2. Primary and Ultimate Results of Vaginal Hysterectomy for Cancer, by Charles A. L. Reed, Cincinnati, Ohio.
3. Title not announced, Rufus B. Hall, Cincinnati, Ohio.
4. Gonorrhœal Disease of the Uterine Appendages, by J. M. Baldy, Philadelphia, Pa.
5. A Plea for Early Vaginal Hysterectomy in Cancer of the Uterus, by Franklin H. Martin, Chicago, Ill.
6. A Retrospect of Pelvic Surgery, by Joseph Price, Philadelphia, Pa.
7. The Treatment in Placenta Prævia, by Aug. P. Clarke, Cambridge, Mass.
8. Moot Points in the Doctrine of Placenta Prævia, by W. W. Jaggard, Chicago, Ill.
9. The Treatment of Placenta Prævia, based on an Experience of Thirty-four Cases, by G. H. Balleray, Paterson, N. J.
10. She Supposed it was Her Change of Life, by A. Vander Veer, Albany, N. Y.
11. Title not announced, by J. H. Kellogg, Battle Creek, Mich.
12. A Résumé of the Ideas of Paul Portal's Pratique des Accouchments, by John Bartlett, Chicago, Ill.

13. Psychical Results of Gynecological Operations, by I. S. Stone, Lincoln, Va.
14. Stricture of the Urethra in Women, by Ely Van de Warker, Syracuse, N. Y.
15. Title not announced, by John B. Deaver, Philadelphia, Pa.
16. Title not announced, by C. P. Penrose, Philadelphia, Pa.
17. Antiseptics in Obstetrics, by T. B. Greenly, West Point, Ky.
18. Hyperemesis Gravidarum, by E. W. Mitchell, Cincinnati, O.
19. Uterus Bilocularis, by L. H. Dunning, Indianapolis, Ind.
20. The Great Utility of Bleeding in Puerperal Convulsions, by John G. Meacham, Racine, Wis.
21. Title not announced, by Wm. E. Ashton, Philadelphia, Pa.
22. A Plea for the General Adoption of the Traction Forceps, by Joseph Hoffman, Philadelphia, Pa.
23. Surgical Treatment of Non-Pedunculated Abdominal Tumors, by Henry O. Marcy, Boston, Mass.
24. Extra-Uterine Pregnancy, with Cases, by E. E. Montgomery, Philadelphia, Pa.
25. Laparatomy for the Purpose of Restoring the Functions of the Tubes and Ovaries, by William M. Polk, New York, N. Y.
26. Abdominal Section; its Practical Success, by R. Stansbury Sutton, Pittsburgh, Pa.
27. The Intra-Peritoneal Ligature, by L. S. McMurtry, Louisville, Ky.
28. A New Operation for the Relief of Prolapse of the Anterior Vaginal Wall, by Andrew F. Currier, New York, N. Y.
29. Diseases of the Female Pelvic Organs, and when to Operate by Abdominal Section, by M. B. Ward, Topeka, Kansas.
30. Fistulous Escape of Ligatures After Ovariotomy, or Abdominal Operations, by Marie B. Werner, Philadelphia, Pa.
31. Drainage in Abdominal Surgery, by George Erety Shoemaker, Philadelphia.
32. The Diagnosis and Treatment of Ectopic Pregnancy, by Neil Macphatter, Denver, Col.

The attention of authors of incomplete titles is respectfully invited to the importance of forwarding to the Chairman at once a full subject title of their papers.

This list is made up in the order of the reception of the titles; the papers will be grouped by subjects as near as possible for the meeting. Authors whose titles are not announced are requested to send them to the Chairman without delay.

Section of State Medicine.

Chairman—John B. Hamilton, Washington, D. C., Surgeon-General U. S. M. H. S.
Secretary—Francis S. Bascom, Salt Lake City, Utah.

FIRST DAY.

1. Annual Address of the Chairman.
2. Report of the Committee on Meteorology, by N. S. Davis, Chairman.
3. Report of the Committee on School Hygiene, by D. F. Lincoln, Chairman.
4. The Hygiene of the Eyes of School Children, by Dudley S. Reynolds.

DISCUSSION ON FOREGOING PAPERS.

5. Government Aids to Public Health, by Walter Wyman, M. H. S.

SECOND DAY.

1. The Causation of Influenza and some Allied Diseases, with Suggestions for their Prevention, by Henry B. Baker, President American Public Health Association.
2. Observation on the Symbiosis of certain Microörganisms, as influenced by Low Temperatures, by Jos. J. Kinyoun, M. H. S.

DISCUSSION ON FOREGOING PAPERS.

3. Paper, subject to be announced, by George H. Rohé.
4. Election of Section officers for ensuing year.

EVENING SESSION.

The special order of the evening will be a paper by George M. Sternberg, U. S. A. It will be illustrated by the stereopticon.

THIRD DAY.

1. Our Urban African Population, by J. Berrien Lindsley.
2. Los Angeles County, Cal., as a Home for the Aged, by Jay H. Utley.
3. Advantages and Disadvantages of High Altitudes, by T. G. Horn.
4. Bacteriology, by Frank Billings.
5. A Comparison between our College Work and that of European Medical Schools, with some Thoughts on Free Trade in Medical Diplomas Manufactured Abroad, by S. O. L. Potter.
6. Paper, subject to be announced, by J. R. Briggs.
7. Miscellaneous Business.

Section of Ophthalmology.

Chairman—S. C. Ayres, Cincinnati, O.
Secretary—E. J. Gardiner, Chicago, Ill.

1. Address by the Chairman.
2. The Uses of Jequirity, by Wm. Cheatham, Louisville, Ky.
3. Jequirity in the Treatment of Diphtheritic Conjunctivitis, by A. E. Prince, Jacksonville, Ill.
4. A Danger in the Use of Jequirity heretofore Unmentioned, by T. E. Murrell, Little Rock, Ark.
5. Enucleation in Panophthalmitis, by J. E. Sinclair, Nashville, Tenn.
6. Functional Nervous Diseases, by A. R. Baker, Cleveland, O.
7. Sympathetic Ophthalmia, by C. M. Hobbey, Iowa City, Ia.
8. Report of a Case of Sympathetic Inflammation Two Weeks after Enucleation of the Injured Eye, by Geo. H. Goode, Cincinnati, O.
9. Tobacco; Its Effects upon the Eye-Sight, by Flavel H. Tiffany, Kansas City, Mo.
10. A Simple and Reliable Astigmometer, by F. C. Hotz, Chicago, Ill.
11. The Necessity for more Care in the Setting of Lenses when Prescribed for the Correction of Eye Faults, by J. J. Chisolm, Baltimore, Md.
12. Some Observations on the Correction of Low Degrees of Astigmatism, by T. E. Murrell, Little Rock, Ark.
13. Progressive Hypermetropic Astigmatism, by W. T. Montgomery, Chicago, Ill.
14. A Clinical Study of a Series of Cases Exhibiting Slight Macular and Perimacular Changes, by G. E. de Schweinitz, Philadelphia, Pa.
15. Report of a Case of Transplantation without a Pedicle for Cicatricial Ectropion. Blepharoplasty by Wolf's Method, by J. Morrison Ray, Louisville, Ky.
16. Some Points worthy of Consideration in the Operation for the Extraction of Cataract, by J. W. Wright, Columbus, O.
17. Case of Pemphigus of the Eyelids, by D. Emmett Welsh, Grand Rapids, Mich.
18. Tests of Visual Acuteness and the Standard of Normal Vision, by Edw. Jackson, Philadelphia Pa.
19. (a) Report of a Case of Left Lateral Homonymous Hemianopsia Associated with a Wound of the Occipito-parietal Region of the Right Side of the Head.
20. (b) Exhibition of an Instrument for the Measurement of the Radius of Curvature of Lenses, by R. Tilley, Chicago, Ill.
21. The Amblyopia of Strabismus, by Jno. F. Fulton, St. Paul, Minn.
22. The Increase of Blindness in the United States and

the Importance of its Prevention, by J. L. Minor, Memphis, Tenn.

23. Eye Strain as a Cause of Headaches, by B. J. Baldwin, Montgomery, Ala.

24. The fult Correction of Hyperopia with Convex Glasses, by W. Franklin Coleman, Chicago, Ill.

25. Treatment of Conjunctivitis Granulosa, by Peter D. Keyser, Philadelphia, Pa.

26. A Case of Static Lenticular Astigmatism, Acquired by Long-continued Use of Spectacles having a Faulty Position. By George Frothingham, Detroit, Mich.

27. (*a*.) Hæmorrhage after Cataract Extraction; (*b*.) Boracic Acid and Massage in Pannus, by C. R. Holmes, Cincinnati, O.

Section of Laryngology and Otology.

Chairman—John O. Roe, Rochester, N. Y.

Secretary—Frank H. Potter, Buffalo, N. Y.

1. The Value of Different Operations for Nasal Stenosis, by Max Thorner, Cincinnati, O.

2. An Anomalous Condition of the Human Voice, by Alexander W. MacCoy, Philadelphia, Pa.

3. Suggestions on the Use of Electricity in Ear Diseases, by E. L. Jones, Florence, Ala.

4. Glandular Hypertrophy at the Base of the Tongue, by A. B. Thrasher, Cincinnati, O.

5. Fractures and Concussions (Contra Coup) of the Temporal Bone as a Cause of Deafness, by Laurence Turnbull, Philadelphia, Pa.

6. The Galvano-Cautery and its Use in Certain Nasal Affections, by Wm. Cheatham, Louisville, Ky.

7. Pathology and Treatment of Tinitus Aurium, by A. A. Hubbell, Buffalo, N. Y.

8. The Importance of Surgical Means Applied to the Naso-Pharynx in the Relief of Naso-Pharyngeal and Middle Ear Catarrh, by C. W. Richardson, Washington, D. C.

9. How Can We Best Utilize for Scientific Study the Clinical Material so Abundant in Large Dispensaries? by O. B. Douglas, New York, N. Y.

10. Salol in Acute Pharyngitis and Tonsillitis, by Jonathan Wright, Brooklyn, N. Y.

11. Imperforate Auditory Canal, by Seth S. Bishop, Chicago, Ill.

12. On Laryngismus, by J. H. Bryan, Washington, D. C.

13. Hygiene of the Upper Air Tract, by J. E. Schadle, St. Paul, Minn.

14. Note on Nasal Hæmorrhage, by Frank H. Potter, Buffalo, N. Y.

15. Discussion on Croup and Diphtheria:

I. Their Identity, by D. Bryson Delavan, New York, N. Y.

II. Their Duality, by J. Solis-Cohen, Philadelphia, Pa.

III. Treatment: (*a*) Medical, by William H. Daly, Pittsburg, Pa. (*b*) Surgical, by F. E. Waxham, Chicago.

16. Throat Deafness, by E. Fletcher Ingals, Chicago.

17. Surgical Treatment of Chronic Spasm of the Larynx, by J. P. Creveling, Auburn, N. Y.

18. Tinnitus Aurium and Nasal Surgery, by H. Holbrook Curtis, New York.

19. Precautions to be Observed in Intra-Nasal Operations, by Carl Seiler, Philadelphia, Pa.

20. Aural Complications from Chronic Catarrhal Inflammations of the Nose and Throat, by W. I. Edwards, Nashville, Tenn.

Papers have also been promised by R. Norris Wolfenden, London, England; Carl Seiler, Philadelphia; E. L. Shurly, Detroit; Clarence C. Rice, New York, and M. F. Coomes, Louisville, Ky.

All those contemplating reading papers before this Section are requested to forward their titles to the Secretary at once.

Section of Diseases of Children.

Chairman—I. N. Love, St. Louis, Mo.

Secretary—E. F. Brush, Mt. Vernon, N. Y.

1. Chloral Hydrate in the Treatment of Scarlatina, by J. C. Wilson, Philadelphia, Pa.

2. The Value of Sulphonal in Children's Diseases, by W. C. Wile, Danbury, Conn.

3. Value of Atropia in Enuresis, by R. B. James, New York, N. Y.

4. Croup, by E. R. Early, Ridgeway, Pa.

5. Significance of High Temperature in Children, by W. L. Stowell, New York, N. Y.

6. Therapeutical Value of Antipyrin in Diseases of Children, by S. Henry Dessan, New York, N. Y.

7. Phenacetin in Whooping-Cough, by John T. Winter, Washington, D. C.

8. Further Observations Upon Tooth and Mouth Disease in the Relation to Human Scarlatina as a Prophylactic, by I. W. Stickler, Orange, N. J.

9. Tinea Capitis, by H. T. Dixon, Evansville, Ind.

10. Overmedication During Childhood, by B. F. Hart, Sweetsprings, Mo.

11. The Psychical Factor in Pædiatrics, by Frank Woodbury, Philadelphia, Pa.

12. Milk Sugar in Infant Feeding, by E. F. Brush, Mt. Vernon, N. Y.

Section of Medical Jurisprudence.

Chairman—T. B. Evans, Baltimore, Md.

Secretary—T. D. Crothers, Hartford, Conn.

The following is a list of titles of papers which will be read before this Section. The papers in the first and third sessions will be arranged differently, and include many others that are not announced.

FIRST SESSION.

Clinical Jurisprudence.—Reports on medico-legal questions occurring during the year. Relation of cases, etc.

1. President's Address, Responsibility in Dipsomania, by Thomas B. Evans, Baltimore, Md.

2. Medico-Legal Significance of Facts Common to Insanity and Inebriety, by T. L. Wright, Bellefontaine, O.

3. The Psychopathic Sequences of Hereditary Alcoholic Entailments, by Charles H. Hughes, St. Louis, Mo.

4. Some New Medico-Legal Questions Relating to Inebriety, by T. D. Crothers, Hartford, Conn.

5. The Medico-Legal Relation of the Physician to the Inebriate and Inebriety, by I. N. Quimby, Jersey City, N. J.

6. The Need of a New Criminal Jurisprudence Affecting Inebriety, by Norman Kerr, London, Eng., delegate from British Medical Association.

7. Subject not received, by Lewis D. Mason, Brooklyn, N. Y.

8. The Medico-Legal Relations of Central Paralysis, by D. R. Brower, Chicago.

SECOND SESSION.

Surgical Jurisprudence.—Papers on medico-legal questions in surgery and toxicology, etc. Discussion.

1. Medico-Legal Relations of Abdominal Surgery, by Albert Vanderveer, Albany, N. Y.

2. Medico-Legal Bearings of the Battey Operation, by Robert Battey, Rome, Ga.

3. What is the Medico-Legal Status of the Abdominal Surgeon? by William Porter, Buffalo, N. Y.

4. Medico-Legal Aspects of Gunshot Wounds of the Abdomen, by Nicholas Senn, Milwaukee, Wis.

5. The Responsibility in Cases of Intestinal Obstruction, by B. T. Shimwell, Philadelphia, Pa.

6. Some Special Reasons Why the Laparotomists Should Consider the Medico-Legal Aspects of Abdominal Surgery, by Henry O. Marcy, Boston, Mass.

7. Exploratory Laparotomy from a Medico-Legal Standpoint, by William C. Wile, Danbury, Conn.

8. The Medico-Legal Responsibility in Abdominal Surgery, by J. D. S. Davis, Birmingham, Ala.

9. The Medico-Legal Questions Which Arise from the Mistakes of Abdominal Tumors for Pregnancy, by David W. Yandell, Louisville, Ky.

10. The Legal Responsibility in Surgery of the Abdomen, by Thomas H. Manly, New York, N. Y.

THIRD SESSION.

Medico-legal question in the practice of medicine, including obstetrics and insanity, etc. Discussion.

1. The Legal Aspects of Spinal Concussion, by S. V. Clevenger, Chicago, Ill.

2. Medico-Legal Relations Between Railway Surgeons, the Company and the Injured, by R. Harvey Reed, Mansfield, O.

3. Traumatic Neurosis: Its Medico-Legal Relations, by Frederick Peterson, New York, N. Y.

4. Injury Inflicted by Unscrupulous Malpractice Suits, by Wm. F. Waugh, Philadelphia, Pa.

5. Newspaper Canards as Factors in the Insane Hospital Management, by James G. Kiernan, Chicago, Ill.

6. The Relation of the Physician to the Problem of the Correction of Vice, by G. Frank Lydston, Chicago.

7. Some Facts Concerning the Jurisprudence of Medical Electricity, by Clark Bell, Esq., New York, N. Y.

Authors of papers whose titles are not announced, and others who expect to read papers or present records of cases, are requested to send them to the Secretary at Hartford, Conn., at once.

Section of Practice of Medicine, Materia Medica and Physiology.

All communications should be addressed to the Chairman, Dr. J. H. Musser, Fortieth and Locust streets, Philadelphia, as the Secretary has been called to Europe.

FIRST DAY.

1. Address of Chairman.

2. Filaria, with the presentation of a patient, by — De Saussure, Charleston, S. C.

3. Heart Affection at High Altitudes, by S. E. Solly, Colorado Springs, Col.

4. Calomel as a Diuretic, by George Fackler, Cincinnati, O.

5. The Treatment of Insomnia and Neuralgia by Butyl Chloral Hydrate, by Hobart A. Hare, Philadelphia.

6. Recent Clinical Notes on Exophthalmic Goitre, by E. D. Furgeson, Troy, N. Y.

7. On the Treatment of Bright's Disease With Chloride of Sodium, by A. Memminger, Charleston, S. C.

8. Cleanliness and Pure Air in Maternity Work, by Joseph Price, Philadelphia.

9. Antiseptics, by Hiram Corsou, Conshohocken, Pa.

10. Rheumatism and its Treatment by the Turkish Bath, by C. H. Shepard, Brooklyn, N. Y.

11. The General Action of Phenacetin, by George H. Pierce, Danbury, Conn.

12. Cliuical Notes on Alterations in the Respiratory Rhythm, by Wm. A. Edwards, San Diego, Cal.

SECOND DAY.

13. The Continued Fevers of the South. Discussion opened by W. W. Johnston, Washington, D. C., and J. R. Furniss, Selma, Ala. 1. Their Nature, by John P. Wall, Tampa, Fla.; E. Marechal, Mobile, Ala.; R. Matas, New Orleans, La.; T. J. Happel, Trenton, Tenn.; D. C. Ewing, Batesville, Ark.; F. L. Sim, Memphis, Tenn.; J. C. Shepard, Winchester, Tenn. 2. The Differential Diagnosis, by George Dock, Galveston, Texas; B. F. Humphries, Hawkins, Texas; James E. Reeves, Chattanooga, Tenn. 3. The Renal Sequelæ of Malaria, by A. Memminger, Charleston, S. C.

14. The Ocular Complications of Malaria, by G. E. de Sweinitz.

15. Continued Fever of Charleston, S. C., or Gastro-Hepatic Fevers, by Thomas Legare, Charleston, S. C.

16. Malaria and the Causation of Periodic Fevers, by H. B. Baker, Lansing, Mich.

17. Chemical and Bacteriological Examination of Some Water Supposed to Have Caused Typhoid Fever, by Victor C. Vaughan, Ann Arbor, Mich.

18. Specific Treatment of Typhoid Fever, by J. H. Van Eman, Kansas City, Mo.

19. Naphthol in Typhoid Fever, by L. Wolff, Philadelphia.

20. Has Progress Been Made in the Medicinal Treatment of Typhoid Fever? by T. J. Happel, Trenton, Tenn.

21. The Modern Treatment of Rheumatism, by John V. Shoemaker, Philadelphia.

22. Facial and Thoracic Deformities Incident to Obstruction of the Naso-Pharynx, by W. E. Casselberry, Chicago.

23. Sulphonal, the Conditions and Limitations of its Value as a Hypnotic, by Henry M. Field, Newton, Mass.

24. Neurasthenia, by I. D. Wiltrout, Hudson, Wis.

25. A Substitute for the Kymographeon, by John P. Sawyer.

THIRD DAY.

26. Abuses of Antipyretic Medication, by S. Solis-Cohen, Philadelphia, Pa.

27. Oxygen, its True Value as a Therapeutic Agent, by J. M. French, Cincinnati, O.

28. Note on a Case of Fatal Leukæmia following Prolonged Lactation, by W. W. Jaggard, Chicago.

29. The Therapy of Tuberculosis Pulmonum, by James T. Whittaker, Cincinnati, O.

30. The Therapy of Phthisis Pulmonalis, by E. L. Schurley, Detroit, Mich.

31. Bright's Disease as a Neurosis, by John A. Benson, Dunning, Ill.

32. Functional Albuminuria, by Wm. B. Davis, Cincinnati, O.

33. On the Management of Obstinate Dropsies, by Jas. Tyson, Philadelphia.

34. Reform Therapeutics, by Joseph H. Warren, Boston, Mass.

35. Hydrophobia: (*a*) Clinical Study of Hydrophobia, with Statistics and Report of Cases, by Harold N. Moyer, Chicago; (*b*) Pasteur's Preventive Inoculation of Rabies, by A. Lagorio, Chicago. Discussion by C. W. Dulles, Philadelphia.

36. Antiseptics, by Hiram Corson, Conshohocken, Pa.

FOURTH DAY.

37. Consideration of Auto-intoxication from Nitrogenous Elements of the Food when Taken in Excess, by John P. Sawyer, Cleveland, O.

38. Influenza, by J. B. Johnson, Washington, D. C.

39. Water, the Parallelism of its Uses in the Physical World and the Human Cosmos, by G. W. Drake, Chattanooga, Tenn.

40. Some of the Vagaries of the Grip, by C. F. Ulrich, Wheeling, W. Va.

41. Present Status of Forced Respiration, by George E. Fell, Buffalo, N. Y.

42. Pneumonia and Bronchitis following La Grippe, by D. M. Wick, New Hartford, Iowa.

43. On the Treatment of Bright's Disease with Chloride of Sodium, by A. Memminger, Charleston, S. C.

44. General Aspects of Bacteriology and Medicine, by H. C. Markham, Independence, Iowa.

45. The Etiology, Pathology and Treatment of Typhoid Fever, by J. McFadden Gaston, Atlanta, Ga.

46. Title not supplied, by Geo. Dock, Galveston, Tex.

47. Bacteriology in Medicine, by Frank Billings. Chicago, Ill.

Section of Dermatology and Syphilography.

Secretary—William T. Corlett, Cleveland, O.

FIRST DAY, TUESDAY, MAY 20.

Section meets at 2 P. M. each day.

1. Address by the Chairman, Recent Advances in Dermatology and Syphilography.

2. The Relative Value of Mercury and the Iodine Compounds in the Treatment of Syphilis. Discussion by L. Duncan Bulkley, New York, William T. Corlett, Cleveland.

3. A Peculiar Case of Addison's Disease, by A. H. Ohmann-Dumesnil, St. Louis.

4. The Care and Treatment of the Nails, by J. V. Shoemaker, Philadelphia.

5. Herpes Zoster Gangrinosa of Koposi. A Report of Two Cases, by B. Merrill Rickets, Cincinnati.

6. Some Recent Observations of Leprosy, by P. S Abraham, London.

Appointment of Committee to nominate officers for the ensuing year.

SECOND DAY, MAY 21.

Election of Officers (time fixed by By-Laws).

7. The Etiology and Treatment of Acne. Discussion by Carl Seiler, Philadelphia, B. Merrill Ricketts, Cincinnati.

8. On the Preparation and Employment of Ointments in Diseases of the Skin, by L. Duncan Bulkley, New York.

9. Diseases of the Skin of Nervous Causation. A Report of Two Cases by William T. Corlett, Cleveland.

10. A few more Remarks on Dermatitis Herpetiformis, by A. Ravogli, Cincinnati.

11. Answers to Questions Deposited in Question Box Relating to Dermatology and Syphilography.

THIRD DAY, THURSDAY, MAY 22.

12. Sycosis, its Pathology and Treatment. Discussion by J. V. Shoemaker, Philadelphia, A. Ravogli, Cincinnati.

13. Demonstration of Syphilitic Spores in Blood, by Ephraim Cutter, New York.

14. The Scarlatiniform Erythema of Typhoid Fever, by A. H. Ohmann-Dumesnil, St. Louis.

15. Massage in Skin Diseases, by J. Leslie Foley, Montreal.

16. An Eruption Following the Use of Boracic Acid, with Colored Plates, by William T. Corlett, Cleveland.

17. Further Observations on Paget's Disease of the Nipple, by Louis Wickham, of the Hôpital St. Louis, Paris.

18. Answers to Questions Deposited in Question Box.

Section of Dental and Oral Surgery.

Chairman—J. L. Williams, Boston, Mass.

Secretary—Eugene S. Talbot, Chicago, Ill.

1. Address by Chairman, J. L. Williams, of Massachusetts.

2. Relation of Tropho-Neuroses to Disease of the Mouth and Jaws, with Special Reference to Syphilitic Necrosis, by G. Frank Lydston, Chicago, Ill.

3. How the Vascular Supply is Connected with the Teeth, by A. O. Hunt.

4. Vascular Tumors of the Mouth, and Treatment by Injection, by John S. Marshall, Chicago, Ill.

5. Electro-Therapeutics, by John L. Gish.

6. The Value of Illustration in the Lecture-Room, by L. D. McIntosh, Chicago, Ill.

7. Adenoid Growths and their Effect on the Mouth, by E. E. Briggs.

8. Cure for Cleft Palate by a Double Flap Operation and Closure with the Buried Tendon Suture, by Henry O. Marcy, Boston, Mass.

9. Hereditary Dental Anomalies, by Wm. S. Sherman.

10. Diseases of the Gums, and their Treatment, by J. Tait.

11. Irregularities of the Teeth Caused by Neurotic Conditions, by E. S. Talbot, Chicago, Ill.

Committee on Dietetics.

1. Diet in Consumption, by Herbert Judd, Galesburg, Ill.

Instructions to Delegates.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, County and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *provided*, however, that the number of delegates for any particular State, Territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association as shall make application to the Treasurer and accompany said application with a certificate of good standing, signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, five dollars. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the session of 1888:

"That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

Secretaries of Medical Societies as above designated are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send him annually a corrected list of the membership of their respective societies.

AMENDMENTS TO THE BY-LAWS.

Offered by Dr. A. L. Gihon, United States Navy.

That the first day of the meeting of this Association shall be on the first Wednesday of May or June respectively, instead of Tuesday.

By Dr. X. C. Scott, Ohio:

That the Committee on State Medicine be abolished, inasmuch as the Section on State Medicine occupies the entire ground.

RAILROAD ARRANGEMENTS.

Members of the Association who design to attend the annual meeting at Nashville, May 20, 1890, will be granted a reduction in their return railroad fare only, under the following conditions:

First.—Each person must purchase a first-class ticket (either limited or unlimited) through to the place of meeting, for which he will pay the regular tariff fare, and upon request the ticket agent will issue to him a certificate of such purchase (Form 2).

Second.—If through tickets cannot be procured at the starting point the person will purchase to the most convenient point were such through ticket can be obtained, and there repurchase through to the place of meeting, requesting a certificate properly filled out by the agent at the point where the repurchase is made.

Third.—The reduced rate for the return journey will only apply to points to which through tickets are on sale at the place of meeting, and at which through tickets to the place of meeting were purchased. If through tickets to the starting point can not be procured at the place of meeting, the person will purchase to the most convenient point to which such through ticket can be obtained.

Fourth.—Tickets for the return journey will be sold by the ticket agents at the place of meeting, at one-third the highest limited fare, only to those holding certificates (Form 2), signed by the ticket agent at the point where the through ticket to the place of meeting was purchased, and countersigned by the secretary or clerk of the convention, certifying that the holder has been in attendance upon the convention.

Fifth.—It is absolutely necessary that a certificate be procured, as it indicates that the full fare has been paid

for the going journey, and that the person is therefore entitled to the excursion fare returning. It will also determine the route via which the ticket for return journey should be sold, and without it no reduction will be made.

Sixth.—Tickets for return journey will be available for continuous passage only, no stop-over privileges being allowed on tickets sold at less than full fare. Certificates will not be honored unless presented within three days after the date of adjournment of the convention.

Seventh.—Ticket agents will be instructed that excursion fares will not be available unless the holders of certificates are properly identified, as above described, by the secretary or clerk, on the certificate, which identification includes the statement that one hundred or more persons, who have purchased full fare tickets for the going passage, and hold properly receipted certificates, have been in attendance at the meeting.

The certificates are not transferable, and the signature affixed at the starting point, compared with the signature to the receipt, will enable the ticket agent to detect any attempted transfer.

N.B. Please read carefully the above instructions; be particular to have the certificates properly filled and certified by the railroad agent from whom you purchase your going ticket to the place of meeting, as the reduction on return will apply only to the point at which such through ticket was purchased.

Committee of Arrangements, Dr. William T. Briggs, Nashville, Tenn. WM. B. ATKINSON, Perm. Sec'y.

BOOK REVIEWS.

CANCER OF THE RECTUM ESPECIALLY CONSIDERED WITH REGARD TO ITS SURGICAL TREATMENT. Jacksonian Prize Essay. By HARRISON CRIPPS, F.R.C.S. Asst. Surg. St. Bartholomew's Hosp.; Jacksonian Prize Essayist, R.C.S., 1876; Asst. Surg. Royal Free Hosp., etc. Third Edition. London: J. and A. Churchill. 1890.

This is the ideal of scientific monographs. The original essay has undergone considerable alterations since it was first presented by the author, and as each alteration has been the result of much experience and observation, in its present form the work forms a most valuable contribution to surgical literature. The illustrations which are models of accuracy and beauty, deserve all the more praise from the fact that they were nearly all drawn by Mr. Cripps, while some of them were lithographed by him as well. The illustrations are very numerous, and pertain to the normal and morbid anatomy, and histology of the parts.

The subject matter, which is clear and concise, is divided into the following topics:

1. Anatomy of the rectum and the function of its mucous membrane.
2. Cancer of the rectum—Etiology.
3. Cancer of the rectum—Pathology.
4. Cancer of the rectum—Symptoms.
5. Cancer of the rectum—Differential diagnosis.
6. Cancer of the rectum—Treatment by excision.
7. Cancer of the rectum—Treatment by colotomy.
8. Cancer of the rectum—Palliative treatment.
9. Cancer of the rectum—Tables of cases.
10. Cancer of the rectum—Selected illustrative cases.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U.S. Army, from April 19, 1890, to April 25, 1890.

By direction of the Secretary of War, Major Washington Matthews, Surgeon, is relieved from duty in the Surgeon-General's office, this city, and will report in person to the commanding officer, Ft. Wingate, N. M., for duty at that station. Par. 6, S. O. 90, A. G. O., Washington, April 17, 1890.

By direction of the Secretary of War, Major Peter J. A. Cleary, Surgeon, is relieved from duty at Ft. Wingate, N. M., and will report in person to the commanding officer, Mount Vernon Bks., Ala., for duty at that station, and by letter to the commanding General, Div. of the Atlantic. Par. 6, S. O. 90, A. G. O., Washington, April 17, 1890.

Capt. Louis A. La Garde, Asst. Surgeon, is granted leave of absence for twenty-three days, on account of sickness, upon surgeon's certificate of disability, in extension of leave of absence for seven days granted him by order 17, Ft. Assiniboine, Mont., with permission to apply to the Adjutant General of the Army for an extension of one month on Surgeon's certificate of disability. Par. 4, S. O. 43, Dept. Dak., April 14, 1890.

Capt. Henry I. Raymond, Asst. Surgeon U. S. A. (Newport Bks., Ky.) is hereby granted leave of absence for twenty-five days, to commence on or about May 2, 1890. Par. 5, S. O. 91, Div. of the Atlantic, April 19, 1890.

By direction of the Secretary of War, the following changes of stations of officers of the Medical Department are ordered:

Capt. Henry S. Kilbourne, Asst. Surgeon, from Vancouver Bks., Wash., to Willet's Point, N. Y.

Capt. William W. Gray, Asst. Surgeon, from Ft. Maginnis, Mont., to Ft. Sherman, Idaho.

Capt. John M. Banister, Asst. Surgeon, from Ft. Sherman, Idaho, to Ft. Stanton, N. M. Par. 1, S. O. 93, A. G. O., April 21, 1890.

By direction of the Secretary of War, Major Robert H. White, Surgeon, now on duty at Ft. Meyer, Va., will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for temporary duty as post surgeon during the absence of Major Henry McElderry, Surgeon, as a member of the Army Medical Board, New York City. Upon the return of Major McElderry to duty at West Point Major White will return to his proper station. Par. 4, S. O. 94, A. G. O., Hdqrs. of the Army, April 22, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 26, 1890.

W. K. Scofield, commissioned a Medical Director from February 8, 1890.

Daniel McMurtrie, commissioned a Medical Inspector from February 8, 1890.

E. S. Bogert, commissioned an Asst. Surgeon from April 16, 1890.

L. W. Spratling, commissioned an Asst. Surgeon from April 16, 1890.

Surgeon H. M. Martin, reported his return home and granted sick leave.

Medical Inspector T. Woolverton, detached from Navy Yard, Washington, D. C., and wait orders.

P. A. Surgeon H. G. Beyer, ordered to delay reporting on board the "Yantic" until further instructed.

THE

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ORIGINAL ARTICLES.

VOLUNTEER SANITARY ORGANIZATIONS AS AN AID TO OFFICIAL BOARDS OF HEALTH.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HORATIO R. STORER, M.D.,

OF NEWPORT, R. I.

The question that I am desired to present to you has been often discussed, generally, however, from a merely abstract standpoint. Viewed from the position of public boards, voluntary assistance, even if well organized, has too often appeared interference, while upon the other hand, the private citizen is inclined to criticise the average board official as indolent and the creature of red tape, or else too zealous and inclined to magnify his office.

TWO FIELDS FOR SANITATION, DISTINCT FROM EACH OTHER.

It will be my endeavor to avoid these extremes, and to show from a practical experience in this matter of nearly a dozen years, that in American communities there exist two distinct fields of operation. They are side by side, and necessarily everywhere present, though in some places more markedly so than in others. With the limitation that the law provides as to the supervision of private households by civic or State officials, in the absence of epidemics or complaints of a nuisance, this can be attained, if anything like completeness of result is desired, only by a method of surveillance wholly distinct from that provided by the public authorities.

THE PRIVATE FIELD REACHED ONLY FROM WITHIN.

Domestic privacy, which means not merely that of the family circle, but the retirement of the home water-closet and bath-room, the chamber ventilation, the furnace air supply, the first disposal of the laundry and kitchen waste, can hardly be reached save upon personal invitation from the head of the household. This entrance is not likely to be given to representatives of the press; still less, to the town constable. The family plumber knows of some of the conditions that are present; so does the family carpenter, and so also the family physician. This knowledge is, however, all of it of a confidential character, and if asked for outside would not be certain to be given.

The only key to the situation is through voluntary admission from within, and this is a privilege hardly to be expected save as the outcome of a purely self-interested motive upon the part of the occupant of the premises.

NEED OF INSPECTIONS.

Dwellings, like their owners, grow old and decay. As even infants have their diseases, so do also the newest residences. The rule concerning every house, no matter how recent its date, should be that it requires a thorough periodical inspection, at least once each year. The "Spring cleaning" should be a virtual taking account of stock, and employed as the opportunity of ascertaining defects and of making all necessary alterations and repairs. This is essential for the protection of its own occupants; but since dwellings like individuals become the subject of infectious disease, it also is necessary for the safety of its neighbors. As owners are usually careless and nearly as often incompetent for the purpose, the examination should be made by a specially skilled adept. How then to obtain admission for the practical sanitarian to the most secret recesses of a private house?

Self-interest, as has been implied, is the most potent of all motives that influence mankind. Formerly the mere idea of domestic inspection, otherwise than by the owner, would have been laughed at. Till of late, if a pipe leaked or burst, the plumber was sent for, repaired it, and then took his leave. If a privy was foul it was emptied, just as in croup, scarlet fever and typhoid the physician was summoned, attended the patient till death or recovery occurred, and then discontinued his visits.

With the progress of popular knowledge it is becoming appreciated that in plumbing and scavenging, and in the practice of medicine as well, prevention is far better than cure, though it is still through preventable zymotic disease that almost every household is thinned of its dearest members; and that when such misfortune has

occurred, there remain effects that, if not neutralized, may become doubly disastrous and wide spreading.

INSPECTIONS REQUIRED BY SELF-INTEREST.

At this point, self-interest, well understood, assumes another phase. The money formerly so lavishly spent upon the physician, the pharmacist and the sick nurse, is now much of it begrudged, although to be sure all these succeed in protecting themselves by a steadily increasing tariff. The same is true of the undertaker. Not nearly as many infants in proportion now die as formerly—indeed there are not, in parts of this country at least, as many proportionately to die—but then the loss is eventually made good to the professional person in question by the greater expense attending the funeral of a proportionately increased number of adults, whose lives through sanitary science have been prolonged to maturity.

Having thus reached the financial point in the question, the manner in which the greatest saving is to be effected, for even the millionaire who scatters his wealth most lavishly is as frequently addicted to the practice of prudent economies, the way becomes easier towards the desired result. It is granted, we will assume, that an inspection of one's premises from time to time is found of pecuniary advantage, upon the ground that such eventually lessens plumbers' bills, druggists' charges, doctors' accounts, and postpones those of the undertaker.

AN EXPERT NECESSARY.

The inspection, to be of value, must be by a disinterested person, an expert. The family physician cannot make it, save in a very general, if not indeed wholly superficial, manner. He has not ordinarily the technical skill, nor can he spare the several hours that are necessary to conduct the examination thoroughly, and to prepare a detailed report. The family plumber should hardly be called upon to pronounce upon his own work, and to entrust the survey to a rival would be unfair to the first, and perhaps be as unlikely to elicit a perfectly unbiassed opinion. What else then remains?

Thanks to modern progress, the clearer definement of social needs and the more perfect subdivision of educated labor, the profession of practical sanitation, of sanitary engineering, has become recognized as a necessity. In its way, and to a certain extent, it is indeed to be classed above our own divine science of healing, though to this it owes its existence. It is admirable to restore the diseased to health, but upon the whole, simpler though it may seem, is it not even a higher function to keep men well? Now for house inspections a skilled expert is plainly preferable, but the services of these gentlemen cost much money—no more to be sure than they are worth, or will eventually be prized at—but at this stage of the world's progress a charge of fifty, or even thirty or twenty-five dollars for investigating a residence, seems to most householders quite a sum for the purpose, and the average man who would spend this amount without another thought upon cigars or similar luxuries, hesitates a long time before giving its worth of additional protection to his wife and children.

PROF. FLEEMING JENKIN'S PLAN.

Under these conditions, "a happy thought" struck the late Prof. Fleeming Jenkin, of the University of Edinburgh. He applied to house inspections, the principle of coöperation or mutual insurance, called the new system "Sanitary Protection," and it was placed at once in successful practice. The Association at Edinburgh was the first to be organized, in 1877. Our own at Newport, R. I., was the second, in 1878. London and other cities followed, and now the principle is in extended application. Much has been written concerning its theory and practice. It is unnecessary for me here, to do more than merely state that a portion of its earlier literature emanated from Newport. As a consistent disciple of the Edinburgh school of thought and of practice, it has been a constant satisfaction to me to watch the development of Jenkin's well concerted system.

ITS FEATURES AND ITS COST AT NEWPORT.

The general principle upon which this system is based is the following: To enable its members to obtain for a comparatively very small sum, an inspection of their houses of the same thorough character, as would otherwise cost several times the amount. At present the annual dues of membership in the Newport Association are $2 per year, which collectively defray the current expenses of printing, postage, etc., no salaries whatever being paid. For a house inspection, which may require the better part of a day, with considerable subsequent clerical labor in preparing the report, $8 is charged, and for water analysis $5; these fees being given, entire, to the inspectors and analyst for their services.

NEWPORT SANITARY CONDITIONS.

The city of Newport in its sanitary relations, is peculiar. The compact part of the town is like that of most old American seaports, which were originally wholly commercial. As sails were replaced by steam, and the carrying business, home and foreign, became centralized in what are now the great foci of trade, both wharf and residential property deteriorated in value in the smaller places, and so far from sufficient annual outlay being made to keep them in their former order, a condition of general neglect has necessarily obtained. The foreign have largely replaced the native born as laborers, and houses

that were built for the needs of a single family have now to serve for two or three. Subdivision of use, whether of a dwelling, an out-house or a well, lessens individual responsibility for its care. From times far gone there has been a very general intermarriage between the "old" families within many of these retrograding cities. From Newport besides, till of late years, and indeed the exodus continues, there has been a large emigration of its most energetic young people to places of greater activity, with the threefold effect of progressive loss of public energy, an increased general inertia, and a more marked disposition upon the part of those who have been turning downwards with Fortune's wheel, to become merely glorifiers of the past.

Among the natural effects of this has been the very general retention of the countless old vaults and privies, some of which are in direct connection with wells that are daily employed for household purposes, that still honeycomb the compact portion of these old sea-board towns. In many of them, as here, a free artificial supply of water has been introduced; and in some of them, as here till quite recently, there has been no proper system of sewers to remove the flow, after its pollution.

DANGERS RESULTING.

Again, Newport has become for a portion of the year the centre of American fashion and wealth. Houses of the most expensive character have been built, increasing in number upon a constantly progressing scale. They are furnished with complicated systems of plumbing and drainage. The needs of the place have therefore been twofold. Ancient conditions exist in close proximity to the most modern ones. The dangers of old towns, supersaturated by the retention of centuries of sewage, are supplemented by those arising from the introduction into dwellings upon which architects have lavished all the resources of their art as regards adornment, of every kind of modern so-called sanitary device, good, bad and indifferent, which for economy's sake aside from that of safety, should be as intelligently placed at the outset as possible, and thereafter regularly receive the most intelligent supervision. Many of these establishments are so extensive, and the social demands upon their occupants so great, that all care-taking is entrusted to subordinates, whose only aim again is to play their own petty part in the year's Vanity Fair with the least possible expenditure of trouble. The result has been that more than one Newport palace has proved, wholly unnecessarily, the tomb of its possessor. It would be fortunate for all concerned if such occurrences were of the past alone.

TERMS OF NEWPORT CHARTER.

By the terms of the Charter of the Newport Association, for which the present efficient mayor of the city, Hon. Thomas Coggeshall, was one of the petitioners, it was established for "the purpose of securing the proper sanitary condition of the dwellings of its members, and of any other buildings or premises in said Newport, so as to aid in promoting the sanitary condition of the said city." At that time, January, 1879, there existed no health authorities here save the Board of Aldermen, under whose direction there were a city physician (the present incumbent and the senior of the Newport profession), an inspector of nuisances (who at that time was also the only overseer of the poor), a health officer (in addition, as now, the harbor master, a retired sea captain), and an overseer of small-pox (who was a blacksmith by trade). The Association fully recognized at the beginning the dual character of the responsibilities with which it had been entrusted by the State, to care for the premises of its immediate members, and for their sake as well as for the safety and good name of the whole city, to aid in improving the system that supervised the public health.

CREATION OF NEWPORT BOARD OF HEALTH.

From the beginning, therefore, the Association has persistently labored to obtain a properly organized and sufficiently independent Board of Health, and it has endeavored to do this by repeated memorials to the City Government, by enlisting the interest of the General Assembly, and by producing in many ways a change in public sentiment. In this, at the end of nearly a dozen years of unremitting effort, it may be said to have been in a great measure successful. To have obtained this advance in a city like Newport, with a century of apathy, inertia, and prejudice against all innovations behind it, means a very great deal. The physicians of the place, without exception and year after year, have been in sympathy with the movement, and so have one or two of the clergymen. A general act passed the Rhode Island Assembly empowering Boards of Aldermen to transfer their powers to separate Boards of Health. Though this has not yet been entirely done in Newport, the progress towards its accomplishment is constantly increasing. At first a so called "Advisory Board," of whose members a portion were medical men, was appointed by the Aldermen, but it did not consider it was expected to volunteer suggestions, and its advice was not often asked for or followed. After a year or two, the at present existing improvement was made. A board of five, three of whom are physicians, is annually created for a single year, and annually filled for that time by the Board of Aldermen. It is known as the Newport Board of Health, though often it is still called an advisory board, and probably by many considered as merely such, since the Aldermen occasionally convene "as a Board of Health."

Under such a transient tenure of existence, the Board could hardly at first have been expected to have a very definite policy or to show any remarkable measure of energy. Their suggestions, however, are now received with more and more respect. The appropriations for which they ask are now more generously granted them, and at present there is much more active sympathy between the Board of Health and the Aldermen than ever before. The Board have an executive officer, appointed, upon their nomination, by the Board of Aldermen, and he also acts as their clerk. Neither the inspector of nuisances nor the "health officer" are appointed by them, though they nominate the former, and receive his reports. Both of the present incumbents of these offices are men of experience and well fitted for their duties. The latter has had, perhaps still has, the additional title of "Sentinel," as he is primarily the Harbor-master, and is expected to report the cases of disease upon shipboard that come within his notice. The City Physician happens, fortunately, thought not necessarily, to be a member of the Board.

THE PROGRESS OF THE BOARD.

Frail as is yet the tenure of the Newport Board of Health, it yet deserves credit for what it has already accomplished towards lessening the sanitary dangers and retrieving the repute of the city. Thanks are due to the authorities for having thus far "tried the experiment," as it has been said, of yielding to the advice of those most familiar with such matters, and to the memorials of the heaviest taxpayers, and to what seem the dictates of common sense. The money worth of a bread producer is elsewhere recognized as representing a definite amount in dollars and cents, belonging to the whole community, to preserve which in its effective integrity is, aside from all motives of private selfishness or mere philanthropy and sentiment, a public duty. It has taken Newport a long time to recognize that Death knocks with equal beat upon the gate of the millionaire and the door of the laborer, and that every fatality from zymotic disease, even though from what are called so trivial affections as whooping cough and measles, is so far a disgrace to modern civilization and a robbery of the public treasury. "My father died of typhoid, therefore so should I," would seem to be one of the forms of ancestor worship that still pervades certain of the old New England communities, but the more direct and constant their contact with the outside world, the more completely prejudice yields and the more warmly the at first dreaded, if not derided, innovations of modern science are welcomed. The final abandonment of a polluted site of ice collection, the filtration of the public water supply at its source, the relinquishment of a project for a new cemetery within that area, and the construction of a garbage cremator,[1] all of them since the commencement of the present year, are the direct effects of advice given by the Board of Health, upon public sentiment.

Though the Sanitary Protection Association takes pride in having aided towards the development of a proper Board of Health, it can hardly be satisfied until much that still remains to be done has been accomplished. As at present constituted, there is probably not a single member of the Board whom the Association would desire to have changed, for it combines the decision of maturity with the conservatism of age, and the practical ways of the business man with the scientific training of the physician. As to the extent of the powers of the Board under its present relations there have been differences of opinion, not only on the part of the people but of its own members, and from this it has been blamed for apparent slowness in its work. These questions, however, have of late been clearly decided, and doubts removed, by an exhaustive statement of the law in the case, in its various bearings, enunciated by Judge Darius Baker of this city, at the request of the Newport Business Men's Association. The communication referred to is a brief one, and contains so much that would be of value to other communities, similarly situated, that I present it entire.

JUDGE BAKER'S STATEMENT OF LAW.

"The protection of the public health belongs to what is known as the police power. All property is held subject to this power, which regulates its private use and enjoyment by the owner. If he suffer injury from its exercise, it is either *damnum absque injuriâ*, injury without wrong, or he is compensated for it by sharing in the general benefits which the regulations are intended to secure. This power, which is of wide scope and includes many other things for the preservation of the public health, for convenience of exercise and administration is usually delegated to municipal corporations. For present purposes we shall refer only to that branch of it which pertains to health. This has been expressly conferred upon our city by that portion of the charter which provides that 'the City Council shall have power to make ordinances and regulations for the government of said city relative to the public health.'

"The Public Statutes also provide that 'town councils and boards of aldermen shall be *ex officio* boards of health in their respective towns and may make such rules and regulations, not repugnant to the law, as they shall judge proper for the preservation of the health of the inhabitants thereof, the prevention and abatement of nuisances, the promotion of cleanliness, the removal of the causes and the prevention of the introduction and spread of any contagious or infectious diseases therein,' with authority to affix penalties for the breach of such rules and regulations not exceeding three hundred dollars fine or six months' imprisonment for any one offense, and with the proviso that the City Council may appoint a Board of Health, which shall have all or any part of the powers and duties of the Board of Aldermen as a Board of Health, as the City Council may determine.

"In addition to this, extensive powers as to the abatement or removal of certan nuisances are conferred upon town councils (which may be construed to mean boards of aldermen)—such as slaughter-houses, bone-boiling

[1] The latter, unfortunately, has not proved a complete success.

establishments and fish oil works—as to the regulation or control of the 'construction and location of all places for keeping swine, privy vaults, sinks, sink drains, sink spouts, cesspools, and the outlets thereof;' 'the summary removal of reconstruction of all such as shall be by them deemed prejudicial to the public health, the location of stables and the time or manner of removing filth from them and from the vaults or slaughter-houses' —also as to making suitable regulations and arrangements for the prevention of infectious and contagious diseases, and for the quarantine of vessels and persons on them, and for the burial of the dead. By public law, passed in 1885, a 'town council may order the owner or occupant of any premises' in the town 'to remove at his own expense any nuisance, source of filth, filth or cause of sickness found thereon within twenty-four hours' after notice, under penalty of not exceeding twenty dollars a day for a non-compliance with such order. It may also 'when satisfied upon due examination that any cellar, room, tenement or building in its town occupied as a dwelling place has become, by means of the number of occupants or want of cleanliness or other causes, unfit for occupation as a dwelling place and a cause of nuisance to the occupants or the public,' require the premises in question to be suitably cleansed and, if the order is not complied with, may cause them to be cleansed at the occupants' expense, or may forcibly remove the occupants and close the building against future occupancy.

"The health officer required to be appointed in towns under this act is the agent of the town council for 'making all sanitary inspections,' may 'make complaints for the violation of any law, ordinance, rule or regulation relating to the public health of his town, without giving surety for costs or, in cases of emergency, when the council cannot be conveniently convened, shall have all the authority conferred by this act upon town councils.' The city of Newport is exempted from appointing such health officer; but the power and duties of its Board of Health are commensurate with the powers and duties of the health officer as set forth in the act.

"We have by no means stated all of the powers specifically conferred in relation to the public health and its preservation, but enough has been said to show the scope or extent of the authority delegated to the city in this matter. It is undoubtedly adequate to the exigencies of the case. The next inquiry naturally is as to how far these powers have been exercised by the city. Under them the City Council has from time to time passed various ordinances relating to most, and perhaps all, the subjects above referred to, including quarantine, the burial of the dead, and the regulation of a great many matters properly grouped under the head of nuisances, for example, as to the use of fish manure in this city, the localities of hog pens, the removal of offal, and other filth from private premises, when calculated to injure health, and other kindred matters. It does not seem necessary, as it is not my present purpose, to show how fully these powers have been used as to matters of detail.

"These ordinances were most of them passed years ago, and while, perhaps, they may not be entirely adequate to the requirements of the modern view as to sanitary regulations, yet it is probable that whatever deficiency there may be in them as a system lies largely in the failure to provide the proper means for the efficient enforcement of existing laws and regulations. In the present generally accepted views as to the origin, spread and danger of filth diseases and the means to be employed for their suppression, the old arrangement, under which the inspector of nuisances was the chief and perhaps only executive health officer of the city, is confessedly entirely insufficient. It furnished a way in which a nuisance could be abated, but it is not in harmony with the spirit pervading more recent health legislation, which provides for thorough sanitary supervision and intelligently attempts to prevent as well as to remove the causes of disease.

"The requisites of such sanitary supervision are the gathering of complete health statistics, the right of local inspection, the compelling of a general observance of uniform and wholesome regulations and the power of quarantine and of summarily removing the cause of disease in cases of emergency. I will not attempt to elaborate either of these points. It is difficult to conceive of anyone's objecting to such a system if intelligently and wisely administered. It was a step toward the more efficient administration of health regulations when the City Council passed an ordinance creating a board of health and giving to it practically all of the administrative and executive powers of the board of aldermen as a board of health. The powers of the board under this ordinance are to 'make all proper inquiries into all things in said city which may in any way affect the health;' to 'prepare and compile all such statistics relating to the health of said city as it may deem proper;' to 'see to the enforcement of all laws pertaining to the health of said city as well as the regulations originating with said board and those of the board of aldermen acting as a board of health.' It has an executive officer, and the inspector of nuisances is also subject to its directions. From this it is apparent that the board is clothed with large executive powers, which in emergencies are very reaching, when we take into account the provisions of the act above referred to, passed in 1885.

"I assume that legislative power is not conferred upon the board under the ordinance, notwithstanding the reference to 'the regulation originating with said board,' as that is obviously an allusion to a provision in the ordinance as orginally passed in 1885 (since stricken out), that the board might prepare regulations and submit them to the board of aldermen for their approval.

"Without here discussing the question as to whether events have shown that the power of the board of health might well be enlarged (as to which I simply say that I am inclined to the opinion that for the present the existing division of authority is unobjectionable), I think that it has been generally recognized that its existence has demonstrated its usefulness and necessity. And if its efficiency is to be greatly increased, that can be best accomplished by bringing within its control all matters pertaining to the administration of that branch of government relating to the public health.

"The board itself is apparently open to criticism in not using all of its authority in this direction. It is understood that it has no direct knowledge or supervision of the regulations as to the proper disposal and removal of swill and garbage. Yet the complaints in relation thereto are made to the inspector of nuisances, who under the ordinance is expressly made subject to its order. In my judgment what is now most needed is in this same line of improving the administration of the health department, namely, some provision for the better enforcement of some of the existing regulations and ordinances.

"For instance, a regulation requires a house-holder to get permission before connecting a private drain with a public sewer, and also that a trap shall be placed between the sewer connection and the house. These requirements are eminently proper ones. But the permit being obtained, there is no arrangement for public supervision to see that the work is properly done or that the trap is suitably placed. I am informed that there is at the present time in this city a case of diphtheria in a house where drain pipe connects directly with the public sewer without any intervening trap. There should be some regulation requiring public supervision of such an important matter as this.

"I repeat, therefore, that what now appears to be most requisite in this connection is the taking of those steps which tend to the more efficient enforcement of existing laws, ordinances and regulations.

"Although most of our ordinances as to the preservation of health, as has already been indicated, have the sanction of years, it is not improbable that many of them may

be susceptible of improvement in some respects. The suggestion of such changes, if they are really needed, would naturally first come from those who are to discuss this question of public health as to its practical aspects. I only call attention to two or three things, which are important to be considered in the making of ordinances and regulations like these which have been referred to. These regulations are all infringements upon the rights of owners to use or enjoy their own property, and in consequence they should be no more burdensome than is necessary. Therefore; when a question arises as to the validity of an ordinance, some of the principal tests are: Is it in conformity with existing laws? Is it impartial, fair and general? Is it oppressive? Is it reasonable? At first thought it might seem that, when the power to make ordinances in relation to a certain subject is conferred by some general law upon different municipalities, they might all exercise it in the same way and to the same extent. But it requires no demonstration to show that the provisions of an ordinance might be reasonable as applied to the city of Providence and quite the reverse in reference to the town of Jamestown.

"An ordinance prohibiting the burial of the dead in the lower part of New York city was held to be reasonable and valid. A similar ordinance, practically prohibitive, in a suburban town, was held to be unreasonable and invalid.

"'The law will not allow the rights of property to be invalid under the guise of police regulation for the preservation of health' when such regulation is not for public good. And the question of reasonableness is determined by the courts, and not by juries."

PAST WORK OF ASSOCIATION.

Leaving this portion of the subject, it may be said that the especial field of the labors of the Newport Sanitary Association has been of late among its own members. This is a sphere for activity that will necessarily always exist, even were there fifty boards of health, with all the powers conferable by common law or statute, behind them. For the first few years its meetings were held monthly, at private houses, when papers were read upon sanitary topics, followed by interesting discussions. These were reported fully in the newspapers, and in this way reached the whole community. Through the Association a considerable sum was raised for a house-to-house inspection of the city, and it was made under the direction of the then existing National Board of Health. A report upon the sanitary condition of Newport was thus secured, which even the most unwilling were compelled to acknowledge as thorough and reliable. The Association has encouraged special researches by its members into questions of moment regarding the health of the city. The ice and water supplies[2] of Newport have been subject to most careful investigation by Profs. Pumpelly, of the U. S. Geological Survey, and Hills, the Association's analyst, and Capt. J. P. Cotton, one of its consulting engineers, with the effect of greatly improving their condition. In similar manner the merits of Newport as a residence for persons of phthisical tendency have been studied in a series of reports to the Association[3] by the writer of the present paper, and the facts clearly brought out: 1, that pneumonia and phthisis, originating here, are very rare as compared with the main land; 2, that most of the cases occurring are in unnecessarily damp and clearly circumscribed localities, as houses with wet cellars the number of which is constantly diminishing; and 3, that the moisture of the climate is more than counterbalanced, if not indeed made a favorable feature, by its constant salinity,[4] and the decided equability and comparative mildness of the winter temperature—the conditions being in the main like those of a ship at sea. The Association has taken an active part towards inducing the citizens to adopt the general plan of sewerage and consequent drainage also, which is now in successful operation through the larger part of the compact portion of the town. Every year it has conducted for its members many house inspections, and analyses from private as well as the public sources of water supply. For the latter duty it has from the commencement possessed the valuable services of Prof. Wm. B. Hills, of the Chemical Department of Harvard University, while it has had a succession of house inspectors. Its present inspecting engineers are Messrs. Chapman & Farquhar, whose names as experts in connection with Col. Waring, are familiar to all sanitarians. Through the moderation of the Association's charges, possible only through its system of coöperation, the same thorough examination is made for members for a comparative trifle that otherwise would cost several times the amount. One of the two great ends for which it has labored, the establishment of a city board of health, having been attained, it now more closely confines itself to its private work; not hesitating, however, to express itself when it perceives a public need, and it at all times holds itself ready to assist in every way that may be within its power, any desire or project of the Board that may come to its knowledge.

In conclusion, it may be stated that the establishment of a Volunteer Health Organization at Newport of the character indicated has shown an important and possible way, previously untried in this country, in which such an Association can be of aid to official boards of health.

[2] "The Dangers of Impure Ice." The Sanitarian, May, 1882. "Newport's Water Supply." Ibid., August, 1888.

[3] "Newport, R. I., as a Winter Resort for Consumptives," Ibid, Jan. 11, 18 and 25 and Feb. 5, 1883; "Concerning Newport, R. I., as a Resort for Consumptives," Boston Med. and Surg. Jour., March 22 and April 26, 1883; "The Mild Winter Climate of Newport, R. I., as the Effect of the Gulf Stream," Medical Record, December 22, 1883.

[4] I am well aware of the discussion concerning the part played by chloride of sodium in pulmonary disease. Vide H. B. Baker, "Relations of Certain Meteorological Conditions to Diseases of the Lungs and Air Passages," etc. (Trans. Ninth International Medical Congress, Washington, 1887; Annual Report Michigan Board of Health, 1888.) The peculiar exemption of Ventnor and Newport from these diseases, except as imported, is, however, a sufficient commentary. Wholly independent studies of this question, as regards Newport, made by Dr. F. H. Raukin, Secretary of the Newport Board of Health, and based upon the more recent mortuary statistics to the present time, seem to completely confirm my previous observations and conclusions. The Sanitarian for May, 1889, in analyzing the Newport Board of Health's Annual Report for 1888, editorially states that the death-rate from consumption "is probably the lowest of any equal city population in New England." (Loc. cit., p. 464.)

ORIGINAL DIFFICULTIES OVERCOME.

There were special difficulties in Newport.

1. The non-homogeneity, for evident reasons, of large portions of its population.

2. The traditional, if not hereditary, apathy of the permanent residents regarding public questions of the kind, partly the effect of circumstances already stated, and perhaps also in part the result of the local, non-stimulating, climate.

3. The commensurate lack of interest by the summer people in anything not of a purely social character.

4. The very prevalent fear upon the part of each, lest sanitary agitation might injure the reputation of the place as a resort both for pleasure and for health.

These obstacles are now surmounted. The summer people recognize that pleasures may be purchased at risk to life, unless they give reasonable attention to their surroundings. The winter people have come to see that no matter what the natural advantages of the place, they must provide the same safeguards to the taxpayers that are given by communities elsewhere. The last year's list of members of the Association comprises no less than fifty-two, among them many of the most intelligent, most influential and most wealthy of the residents of Newport.

In the present brief sketch of the success of an isolated experiment in public as well as private sanitation, I have purposely refrained from alluding to the admirable work that has been done elsewhere by volunteer sanitary organizations in aid of official boards of health during special emergencies, at New Orleans, Jacksonville, etc., for each deserves its own historian.

REPORT OF PARENT ASSOCIATION AT EDINBURGH.

It will be of interest, however, if I give a brief sketch of what is being done by the parent body of all the so-called Sanitary Protection Associations, that of Edinburgh, the report of which for the past year has reached me while preparing the present paper.

The President of the Edinburgh Association is Prof. Sir Douglas Maclagan, Kt., M.D., assisted by two Vice-Presidents, a Council of fifteen gentlemen, and a Secretary, who is also Treasurer. There are a Resident Engineer and three assistants. There were no less than 104 public buildings (schools, club-houses, banks, hotels, and hospitals) inspected during 1888, besides many private residences. Since the foundation of the Association, 536 gentlemen's country houses have been examined. The number of guinea subscribers the past year was 529. The balance in bank at the commencement of 1888 was £557 13s. 9d. The income from all sources was £2,253 0s. 7d., making a total credit or "charge" account of £2,810 14s. 4d. The total expense or "discharge" account for the year was £2,033 17s 1d., leaving a balance of £776 17s. 3d. in the treasury at the opening of 1889. An Association whose assets thus reach from $12,000 to $15,000 yearly is clearly capable of accomplishing much good. The results show that the Edinburgh Association is fully competent for its mission. At its recent annual meeting, Sir Wm. Muir stated that "no institution in Edinburgh was of more value to society than the Sanitary Association."

Besides the Edinburgh Association, similar organizations now exist at Glasgow and Dundee, Scotland; London, Bedford, Bradford, Brighton, Cheltenham, Newcastle-on-Tyne, Wolverhampton, Liverpool, Cambridge, Cardiff and Bath, England; Dublin, Ireland; and Montreal, Canada.

ON THE EVIL OF OPIUM EATING.

Read in the Section of Medical Jurisprudence, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. S. WATSON, M.D.,
OF MATTEAWAN, N. Y.

The practice of opium eating in some of its forms is pervading this country to an alarming extent. The preponderance of evidence is positive that this evil is rapidly on the increase. We gather from the Bureau of Statistics that we imported 145,985 lbs. in 1867; in 1869, 157,000 lbs.; in 1880, 533,451 lbs.

This amount has steadily increased each year, and to this should be added the product of this country—opium being cultivated in several of the Southern States, the statistics of which we are unable to obtain. It is estimated, however, that it amounts to several thousand lbs. It is fair to presume that not 25 per cent. is used for legitimate purposes; the remainder goes to the opium eaters. It is impossible for any one unaccustomed to the power of this poisonous drug to imagine the suffering that may be superinduced by its use, and it is scarcely possible to know the injury it is producing upon the people at large. The effect is telling upon the present generation, and it will have its influence upon generations to come. Is it not time that an heroic and united effort should be made to suppress this mighty evil? Is it not the duty of every minister of the Gospel to warn his congregation against this evil by calling their attention to the utter impossibility of quitting the habit when once formed? We feel that such is the province of the ministers, and not only should the attention of the laity be called to the danger of forming such an appetite, but also to the hundreds of quack cures, designed for those who are already addicted to the use of opium, morphia, or chloral, all of which—or nearly all—are worthless, and gotten up purposely to extort money from the poor slaves of this dreadful habit. It is necessary to mention only a few of this class of quack cures: that of the "Scotch Oats Essence" and some twenty others extensively advertised, claiming to

contain no opium in any form, while analyses show that each one is composed of that identical article in some form or other, showing conclusively the treachery of such unprincipled charlatans.

In 1886, the Massachusetts State Board of Health had a complete analysis made of the following opium "cures," some twenty in number, by Dr. Davenport, of 161 Tremont St., Boston, State Analyst and medical sanitary chemist. Dr. Davenport is prominent in his profession, being a member of the American Chemical Society, also those of London, Paris and Berlin: H. Z. Baker, Toledo, O.; J. R. A. Dunn, Elizabeth, N. J.; J. C. Beck, Cincinnati, O.; Theo. Vedings (double chloride of gold cure); Chas. C. Beers, New York City; Geo. A. Bradford, Columbus, Ga.; J. C. Hoffmann, Jefferson, Wis.; P. B. Bowler, Logansport, Ind.; H. H. Kane, New York City; J. S. Carleton, Chicago, Ill.; L. E. Keeley, Dwight, Ill.; S. B. Collins, Laporte, Ind.; F. E. Marsh, Quincy, Ill.; Berrien Springs Dispensary, Berrien Springs, Mich.; J. A. Drollinger, Laporte, Ind.; L. Meeker, Chicago, Ill.; William P. Phelon, Chicago, Ill.; W. B. Squire, Worthington, Ind.; J. L. Stevens, Lebanon, O.; B. M. Woolly, Atlanta, Ga.

Dr. Davenport writes me on the 2d of June that he has also examined "Keeley's double chloride of gold cure" and found it to contain neither morphine nor any gold, and that Dr. Buckland's "Scotch oats essence" contained a large amount of morphine, and Harriet Hubbard Ayer's "vita nuova" a large amount of cocaine alkaloid.

The opium habit is one quite easily formed, the primary effect being rather pleasing than otherwise, acting as a stimulant which invigorates and quickens the senses, animates the spirits, gives energy to the intellect which is followed by calmness and placidity of mind. The individual is, in a manner, insensible of painful impressions, more or less disposed to forget care and anxiety; his feelings are indefinable, he is filled with pleasing fancies, conscious of no other feeling than quiet and vague enjoyment, until finally lost in sleep.

This pleasant effect lasts from three to eight hours, and is followed by nausea, relaxation, headache, and more or less nervous depression. As a person becomes accustomed to the use of opium this pleasant delirium is scarcely felt—with those accustomed to its use in large quantities it is not experienced. Instead of such effect, it has become a builder of business feeling, enabling the *habitué*, or consumer, to engage in his daily business pursuits with renewed energy for the time being. The opium eater's mind seems clear, his thoughts are well directed, his general appearance is above suspicion. In fact, but few of those addicted to the use of the drug for years are suspicioned even by their most intimate friends.

The habit of eating opium, as it is termed, is a vice that all strive to conceal. To have it whispered that he or she is an opium eater gives to many the impression that the individual is living in another world, a world of wonderful dreams and strange experiences.

We have known of instances where the wife has clandestinely made use of opium or morphine for years without the husband's suspecting her. Often have we been urged by the wife to help her out of her dreadful habit without her husband's knowing anything of her condition, giving as her plea that her husband would surely cast her off forever, were he made aware of the facts. We can call to mind an instance, that of the wife of a prominent physician who had been using opium some years before her husband discovered the cause for her otherwise unaccountable symptoms and actions. We think it is high time that a warning word be sent out against this meanest of self-indulgences, nor should the poor sufferers be left to their direful fate or to the tender mercies of the charlatan. The votaries of King Alcohol have received attention from humanitarians, statesmen, physicians and clergymen generally, but the blinded slave to opium is left to go his way almost unnoticed, certainly unaided.

We have stated that one of the primary effects of opium is that of a stimulant, and we will add that it is this pleasant stimulating effect that induces the repetition of the dose. Such a state of stimulation and exaltation can only last a short time, unless more fuel be added. The secondary effect must follow the taking of such a dose of poison into the system, and when it comes, all the suffering to which flesh is heir seems to be concentrated in the victim of this pernicious habit.

The saddest of all is, that he can get no relief unaided, except by repetition of the dose. Sadder still, the dose each time must be larger to satisfy. It is said that no one but the habitual opium eater is able to give the faintest idea of the torture he feels when trying to abstain from the dose. He is driven to madness which causes him, against his better judgment, to seek relief by returning to his habit. It matters not who he may be, whether from the high or the low, of whatever caste, he finds he is, indeed, a slave to a habit over which he has no control—with himself control is a lost quantity. All opium eaters have but one story to tell us, that is that they are no longer free; they are slaves to an appetite which they cannot control. It is admitted that opium eating—no matter how it is used, whether taken through the mouth, or morphia inserted hypodermically—produces a neurosis which amounts to a necessity for the continued use of the drug until a powerful sedative effect is produced by the use of such drugs as will subdue the reflex sensibilities attendant upon abrupt withdrawal of opium. The demand for the drug is so imperative as to place the consumer wholly beyond the powers of

resistance unaided. The experience of hundreds testifies that the use of opium cannot be suddenly abandoned without serious results. The principal difficulty we encounter in treating those addicted to the use of opium, is that they have lost about all their will power, or self-control—in fact, confidence in themselves. Their disease seems to impel them to increase the dose rather than diminish it, and their repeated attempts at abandonment have proved their utter inability to diminish the dose, even gradually.

The process of gradually diminishing the dose requires the presence and skill of a physician. The opium eater needs sympathy, encouragement, moral influence, and such help as can be given him only by one familiar with and devoted to this work. The only remedy or reasonable chance, or plan that offers any positive assurance of cure to the opium user, is to place himself under the care of a specialist, one who is conscientious and who understands from contact, study, and attention his patient's peculiar needs. Factors which stand in genetic relation to opium addiction are necessity and desire.

We have given this subject our personal attention, and we have made extensive inquiry as to the cause, from those using opium and from medical men engaged in the treatment of this neurosis, or habit, and we find a large majority have acquired the habit while suffering from some painful disorder demanding the use of opium for the alleviation of pain. Pain, in most instances, was the supposed physical necessity and the source of their addiction.

Opium in some of its forms is often innocently and thoughtlessly suggested by a friend for the relief of insomnia or some slight pain, as toothache, earache, etc. Frequently the habit is thus thoughtlessly acquired. Oftentimes the blame should rest upon the attending physician who may have recognized a necessity for an anodyne for immediate relief, but failed to warn his patient against repetition or continuance of the drug. Let the first cause be what it may, when the habit is once formed it is one which is not easily thrown off—in fact, unaided, it is practically impossible. The general public have no adequate conception of the strength of the opium habit. It is not with the opium eater as it is with those addicted to the use of alcoholics or tobacco, which may be thrown off by a strong effort of the will, while the opium eater's will power is weak.

Nevertheless opium eating is a vincible disease, and every case is curable, the patient being otherwise constitutionally strong, free from organic disease, and possessing an earnest desire to be cured. As to the extent or duration of the habit, it matters not, nor need there be any dread of the often heard of ordeal that must be passed through, that has been pictured as a hundred times worse than death itself. The days of such inhuman methods are no more. More humane, rational and scientific methods are now offered these unfortunate sufferers. We use the word sufferers, for those who are addicted to the use of opium in any form are persistent sufferers from various nervous symptoms. The ravages of opium addiction are on the nervous system, bringing about various reflex disturbances.

We regret that there is such a lack of knowledge on the part of the laity, they not having been warned of its insidious effects, and we cannot too strongly urge the necessity of a warning word from those to whom the people look for guidance. The medical profession and the clergy have a duty to perform, as also has the religious press, in this direction. The laity also should be warned against quackery and charlatanism of the so-called "cures" for opium addiction. The newspapers and periodicals have many such advertisements, designed by the unscrupulous to catch the victims of this habit; yea, there are hordes of such fiends in human shape who are ready, at every turn, to make capital out of your misfortunes. Quacks and charlatans have a rich harvest from this source. These heartless villains often advertise under the pseudonyms of "clergymen," charitable institutions, etc., usually offering for sale some mixture that is a sure cure, in proof of which they not infrequently cite testimonials of numerous individuals who have been cured, though they never really lived. Another plan is a reverend gentleman, a late missionary from South America or elsewhere, who is intent on doing good, who has found out or discovered, by some strange circumstances, a positive cure for opium addiction in all its varied forms. He asks nothing for his great discovery, and is so determined on doing good that he will send to any poor sufferer the requisite medicine to effect a perfect cure for the actual cost of the drugs. Look out for this fellow, keep your money, do not be duped. This is but one of the many ways these human sharks pursue their prey. Do not waste money and time in consulting or corresponding with such unprincipled charlatans who make such glowing pretensions. Nor is it safe to consult the traveling "doctor."

Physicians of real merit have plenty of work at home, and are not obliged to go abroad in quest of patients. Consult only some well known, reliable physician in whom you have confidence, and whom you have every reason to believe understands his professional duties. Should your family physician treat the case lightly, you will not judge him harshly though you decide that he may be thoroughly competent to treat diseases generally, yet he may be ignorant of the nature and proper modes of treating opium addiction.

It is an unfortunate fact that comparatively few physicians to-day are acquainted with the modern methods of cure, while very few seem to feel any

real interest in the matter. There can be no stereotyped cure for the opium habit. The plans have to be varied to suit special symptoms and peculiar constitutional idiosyncrasies. Some individuals show a much greater degree of reflex irritation than others. On attempting to withdraw the use of opium, with some it is best to rapidly withdraw to avoid impatience, while others do better under a gradual withdrawal. Females generally do best on the slow method, sometimes requiring two or three months for a radical cure. It is always proper to get the patient thoroughly under the influence of nerve sedatives to diminish the reflex disturbances attendant upon the withdrawal of opium. When under the influence of proper sedatives the opium may safely be diminished with but little discomfort to the patient. Uncomplicated cases can safely be promised recovery without the loss of an entire night's sleep. All cases demand more or less tonics and stimulants, judiciously administered, to bridge them over.

Let the cause be what it may that induces the habit, we cannot afford to ignore the fact of the existence of such a habit. It thrusts itself upon us and demands our earnest attention and candid consideration. The evil is widespread; its victims are legion. There is not a village or hamlet in the land that has not its opium eaters, nor is there a drug-store which does not have its patrons for this drug.

CHYLOUS CYSTS OF THE MESENTERY, WITH A REPORT OF A CASE.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY N. B. CARSON, M.D.,
OF ST. LOUIS, MO.

In presenting the following rare and interesting case, I had hoped, when the operation was first determined upon, to be able to add something to the limited knowledge as to the origin, etc., of these cases, but am sorry to admit that no additional light was obtained. The literature of the subject is very meagre, as Werth says, of little value.

In manuals of pathological anatomy, cystic tumors are simply referred to, and in most of them, chylous cysts are mentioned only in connection with dilatations of the thoracic duct. The following case, as far as I have been able to discover, is the only one found in American literature, and the cyst the largest one reported up to the present time. I first saw this patient three years ago, and at that time I had him under observation for three months when I lost sight of him and did not hear of him again until February of the present year. When first seen the following history was obtained: M. J., age 39, Norwegian, blonde, married, manufacturer, resident of St. Louis fifteen years, of phlegmatic temperament, medium height, slight build, well nourished, weight about 150 pounds, family history good, father and mother living to advanced age. The patient had always enjoyed good health, with the exception of an attack of chills, when 24 years of age, and typhoid fever about five years ago, from both of which attacks he recovered rapidly. The malarial attack reduced his weight from 165 to 150 pounds, at which it remained.

Upon examination a tumor the size of a fœtal head, globular in shape, was found midway between the umbilicus and pubis, a little to the right of the median line, freely movable upon its point of attachment which could be readily made out to be the first and second lumbar vertebræ. The diagnosis was mesenteric cyst, and to discover its true character I aspirated and drew off several ounces of a whitish, milk-like fluid, which I immediately recognized as chyle.

After seeing its contents, from its situation and apparent short pedicle, I changed my diagnosis to cyst of the receptaculum chyli, a condition more frequent, according to the literature then at my disposal, than chylous cyst of the mesentery. During the three months that the patient was under observation there was no apparent filling up of the sac. I then lost sight of him, as already stated, until February of this year, when he sent for me and I found him with a localized inflammation around the tumor which had increased to the size of a large adult head. The tumor, he said, had changed very little from the time it was tapped until recently, since when it had been steadily and rapidly increasing, and of late had given him much trouble and annoyance. His general health up to the time of the acute attack had been good, his weight remaining about the same—150 pounds. The situation of the tumor was unchanged and the only alteration which had taken place was in its size; I advised its removal as soon as his condition would allow. To this he readily consented, and on March 3 I did laparotomy, and after emptying the sac of five pints of the fluid resembling in all respects that removed at the tapping above referred to, I stitched first the peritoneal surfaces together, then the walls of the cyst to the skin, filling the cavity with iodoform gauze. The patient readily recovered and at the present time is attending to his business.

I am indebted to Dr. Bremer for the following analysis of the fluid. Dr. Bremer says: "The fluid handed me for examination is of a cream white color, its specific gravity is 2014, its reaction alkaline; it contains albumen but no fibrine: microscopically large granular cells are found in abundance, in some of which protoplasm has undergone fatty degeneration of all degrees of intensity. Their chief anatomical elements,

however, consist in minute fat globules, resembling in size those of milk. Crystals of the sodium chlorides are also found in great numbers; chemically it contains on superficial analysis, the chlorides, carbonates and sulphates. The fact that cells containing fresh and intact protoplasm are found, would go to prove that the cyst from which the fluid was taken was somehow connected with a canal carrying fresh cells, probably with the lacteals, or the cysterna mesenterica. The fluid two months after the operation did not show any signs of putrefaction." The walls of the cyst were thick, hard and externally, in places, rough and irregular, due no doubt to the recent inflammation. The right wall was thicker than the left and the lining was smooth and for the most part covered with yellow lamellæ, seemingly fibrous in character. Numerous blood-vessels, some of them of large size, were seen in the walls of the sac, although little blood escaped from the incision.

The following tables include 11 cases, all that I have been able to find in the literature up to the present date.

No. and Operator.	Where Reported.	Sex.	Age.	Origin.	Operation.	Recov.	Died	Remarks.
1.—Bramann . . .	Langenbeck, Archiv, Vol. xxxv.	M.	63	Cysterna chyli	Incis'n and stitching walls of cyst to abdom. wall.	1	.	Tumor was size of child's head.
2.—Kilian.	Berlin Klin. Wochenschrift, Nov. 25, 1888.	F.	61	Distended ductus thoracicus.	Incision and drainage . .	1	.	Tapped twice and 4700 cub. cm. of chyle withdrawn.
3.—Kuesler. . . .	Ein Chirurg. Erkentniss, Berlin, 1882.	F.	21	Between mesentery folds.	Extirpation.	.	1	Cause of death septic peritonitis due to wounding of bowel. Tumor size of adult's head.
4.—W.	Milliard and Tilleaut, in Han's paper in Berlin. Klin. Woch., 1887, No. 23.	M.	31	Supposed to have been from a degen. mesenteric gland.	Extirpation.	1	.	About the size of adult's kidney.
5.—Werth.	Archiv. für Gynecol., 1882, Vol. xix.	F.	. .	Mesenteric gland.	Extirpation.	1	.	Size of child's head.
6.—Fenominoff. .	Unjenim and Petroff Dhevnik Kazans Kaho Obschchistra Vratchis, Nos. 7 and 8, 1888, p. 72; also in London Med. Rec., Aug. 20, 1888.	F.	26	Mesenteric glands	Extirpation.	1	.	
7.—Carson.	Amer. Med. Association, June 27, 1889.	M.	42	Not known.	Incision and drainage . .	1	.	Large as adult head; wall very thick and hard.

POST-MORTEMS.

By whom Reported.	When Reported.	Sex.	Age.	Origin.	Remarks.
1.—Enzmann . . .	Basle Inaug. Dis. . .	F.	77	Thoracic duct. . .	Patient died of endocarditis. Walls of cyst thick and flabby. Contents inspissated chyli of a cinnamon-brown color.
2.—Rokitansky. . .	Lehrbuch der Pathol. Anat., 3d edition.	M.	53	Mesenteric gland.	
3.—Rokitansky. . .	Lehrbuch der Pathol. Anat., 3d edition.	M.	36	Mesenteric gland.	There were found several small sized cysts with thick walls and yellowish-white contents. Lobulated sac size of child's head with a milky, slightly rosy fluid, mixed with glutinous red and black lumps.
4.—Virchow. . . .	Berlin Klin. Wochen., 1887, Nov. 14.	.	.		Multilocular.

Of these eleven cases, seven were discovered during life and operated upon; four were found in the post-mortem room. Of this number eight had their origin in the cysterna mesenterica and degenerated mesenteric glands, and three in the receptaculum chyli and thoracic duct. Five were males and five females, and in one the sex was not given. It will be seen from this that sex had no influence in the formation of these cysts. The youngest case reported was 21 years of age, and the oldest 77. Of this number four were under 40 and six between 40 and 80. In one case the age was not mentioned.

As stated above, this includes all cases so far reported, unless we can include a case by Eppinger (*Prager Vierteljahrschrift*, 1873) found in an autopsy, which Werth considers, from the description of the cyst and its contents, to have been a chylous cyst of the mesentery, instead of a dermoid cyst as reported.

The contents of these cysts vary in color and consistency, in the majority being a cream-like fluid, and of about the same thickness, while in others it is thick and putty-like. It may be found in all degrees of consistency between these two extremes. In some the color is yellowish white, in others a cinnamon brown, while in one case it was of a rosy hue, mixed with gelatinous red and black lumps. This difference in color is due, no doubt, to red blood corpuscles derived from the walls of the sac.

The description of the cyst contents, as given by Dr. Bremer, applies to all cases, with the exception that in some, epithelial cells and crystals of cholestrine have been found, which are not present in his analysis. In those cases where the anatomical character of the cyst wall was noted, it was seen to be thick, hard, sometimes almost bony hard, rough externally, irregular in thickness, and to consist of three layers; the inner

layer was made up of endothelium abounding in connective tissue cells, and dilated blood-vessels with recent extravasations of yellow granular matter; the middle layer was formed of fibrous tissue, some cells and vessels, and was traversed by numberless islets of lymphoid tissue and typical lymphoid follicles; the outer layer contained for the most part only fibroid tissue.

These cysts may originate from five different sources; first, from the thoracic duct, second, from the receptaculum chyli, third from the lacunæ mesenterica, fourth, from the mesenteric glands, fifth, from a ruptnre of the chyle duct, within the mesenteric folds. Küster (in *Chirurg. Triennium*, 1876–78) thinks that there is no doubt whatever that we have to consider these cysts as congenital, and that they are caused by fœtal enclosure of parts of external blastoderm. He comes to this conclusion on account of the medium position of these tumors.

Werth (*Archiv. für Gynecol.*, 1882, Vol. xlx) says in those cases where no epithelial cells are to be found, either in the walls of the sac or in its contents, we can conclude the tumor to have had its origin in no vessel into whose composition epithelial takes part.

Such tumors, I can readily imagine, may follow the rupture of one or more of the chyle ducts, due to infarction. Here the irritation set up by the extravasated fluid would cause a blending of the tissues around and an infiltration of fibrine, and as a result, we would have a thick-walled cyst, which would gradually increase in size, as long as the fluid was emptied into it. In those cases having their origin in the mesenteric glands, a gradual distension takes place, followed by a degeneration of the gland tissue and a consequent thickening of the cyst walls due here also to the pressure of the accumulating fluids.

The operation for the relief of these cases consists in laparotomy, with extirpation of the cyst, or in laparotomy with incision of the cyst and drainage. Of the seven cases operated upon in only one death resulted, and that was due to a wounding of the bowel, during an attempted extirpation. Bramann (*Berlin Klin Wochenschrift*, 1887, xxlv, p. 409) favors an operation by incision and drainage and opposes extirpation on account of the danger of gangrene of the intestine. Küster (in *Chirurg. Triennium*, 1876–78), whose case resulted fatally, regrets having wounded the bowel during the operation, and favors incision instead of extirpation. In conclusion, I would advise the removal of the cyst, as soon as it begins to inconvenience the patient or interfere with his nutrition or health, by incision and drainage, instead of extirpation, as I believe the latter operation to be not only difficult, but to endanger unnecessarily the life of the individual.

In most cases a rapid, safe and complete cure can be accomplised by drainage and incision.

A TYPICAL CASE OF OCULAR IRRITATION, CAUSED BY CHRONIC RHINITIS, RELIEVED BY TREATMENT OF THE NASAL TROUBLE.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ADOLPH BLITZ, M.D.,
OF INDIANAPOLIS, IND.

Within the last four or five years neurologists have given the study of nerve reflexes more extensive consideration, and justly so, since we have learned that nerve irritation in one part of the body will produce a train of symptoms in either a contiguous or even remote part, readily traceable to the nerve reflex as the exciting cause, and all treatment directed to other than the seat of the nerve irritation has proved a failure.

Hack first called attention to certain abnormal conditions of the Schneiderian mucous membrane as aggravating causes of affections, the symptoms of which apparently located the trouble in neighboring parts. It was therefore only natural that, on account of the close anatomical relation of the two organs, the eye and the nose, ophthalmologists examined the latter for abnormal conditions which could locate there the probable cause of some, at least, of those affections of the former which, from their persistency and stubborn resistance to apparently proper medication, pointed clearly to nerve reflex as the exciting cause.

Many observations have demonstrated that these reflexes were produced by pressure of the sensitive erectile tissues of the turbinated bodies against the nasal septum. The results showed that where formerly we had many failures to report from the treatment of the eye troubles alone, cures are now possible from thorough application of the proper remedies to those and other abnormalities within the nasal cavity, without applying any local treatment to the affected eyes, thus showing conclusively the reflex origin of the eye trouble, and the nasal cavity as the real seat of the disease.

These nerve reflexes, especially as existing in their relation between the nasal cavity and its ocular neighbors, necessitate the thorough examination of the nasal cavity in all cases of eye troubles presented to the ophthalmic surgeon for treatment; and especially in cases where the causes are at all obscure we may suspect, and, I have no doubt, will often find, a reflex origin.

Since I have become acquainted with the conditions above described I have made it a rule to examine the nasal cavity in almost every case of eye disease presented to me for treatment; and, strange as it may seem, in all the nasal organs I have examined I have so far failed to find one with either a perfectly healthy mucous membrane or free from other abnormal conditions; whether this is because of the climatic changes in our

western country, or otherwise, I am unable to state.

I will here relate the following case, which proved very interesting to me:

Mrs. P. was sent to me by her family physician on October 15, 1888. The patient is about 50 years of age, of slight build, medium height, dark complexion, very nervous, quick of action, and badly nourished. She had been sick with typhoid fever some time before, which left her weak, debilitated and with considerable stomach trouble, which caused loss of appetite, and which partly accounts for her badly nourished appearance, although her husband stated that she never at any time was a good eater, her principal diet consisting mainly of tea, toast and other light foods, seldom eating meat and disliking the taste of milk. She is an untiring worker, always ambitious and self-reliant; she would only desist and remain quiet when compelled to do so by intense pain or other causes which were rather stronger than her will-power. When in any way even partially able to be about, nothing would keep her from work or attending to some outside duties, whether the weather was clear or rainy. She complained of a terribly painful itching in and about the eyes, which had greatly annoyed her since July, with variable intensity.

Examination showed both upper and lower eyelids slightly œdematous; the lower lids especially sagged down and looked baggy, discolored, of a dark purplish hue; here and there a little vesicle appeared, containing a little serum. These vesicles, which were but few in number, made their appearance occasionally, and only when the itching was most severe, and then would disappear; nor were they a constant symptom. The ocular and palpebral conjunctivæ were congested. This congestion at times was very pronounced, and the eyes felt as if they were full of sand. There was considerable photophobia and lachrymation, especially so when exposed to bright light. The ophthalmoscope showed no lesion in either eye, but the glare of the light increased the irritation, produced a fit of sneezing and a copious discharge of tears. It was impossible to test vision on account of the extreme sensitiveness.

Examination of the nasal cavity revealed the entire Schneiderian membrane in a state of intense congestion, the inferior and middle turbinated bodies on both sides being very much swollen and pressing closely against the septum. The nasal cavity was almost entirely impervious, breathing being carried on through the mouth. The parts were very sensitive; touching them at any point with a probe produced great pain, lachrymation and a fit of sneezing. The most annoying symptoms were the intense pain and the intolerable itching in and around the eyes and eyelids, which would come on spasmodically, remain a few minutes, disappear and then return, the intermission varying from a minute to half an hour. Any bright light would intensify these symptoms. The sufferings of the lady were very intense. During a paroxysm she would rub her eyes, then cover them with her hands, while all the time moaning and fretting, and often she would say she felt like tearing her eyes out.

The first part of my treatment of the case proved a failure, although I recognized at once the reflex origin of the trouble and rightly directed the treatment to the nasal cavity; but my mistake consisted in assuming that because of the extreme sensitiveness of the parts and the nervous excitement of the patient, it would be best to commence with a conservative treatment until I succeeded in partially allaying the severer symptoms. I therefore applied a warm vaseline spray to the nasal cavity, with applications of a solution of cocaine, using the latter also to the eyes and eyelids. The patient was also directed to apply a 4 per cent. solution of cocaine externally to the eyelids and surrounding parts, as far as the itching extended. Internally I prescribed a tonic and ordered a generous and nourishing diet. The patient was told to report the following day; but, as she did not come, I thought she probably was so much better that she did not think it necessary to report. Such, however, did not prove to be the case; for, on October 20 she returned, suffering as much as ever. I thought that the failure to get relief was probably due to her neglect in attending to the case, so I requested her to report for treatment every pleasant day; which she did, but in spite of all the soothing applications I could think of, the case made no progress; for while the soothing applications to the nose, eyes and eyelids allayed the pain and itching for a short time; these disagreeable symptoms would soon return, and with renewed vigor.

I then saw my mistake in using only soothing applications, and determined to immediately institute a prompt and vigorous treatment. I made a galvano-cautery application to the swollen turbinated bodies in as thorough a manner as I thought the patient could bear, using a large flat burner for the purpose. The result was magical, for, although the application was quite painful, in spite of the liberal cocaine application of an 8 per cent. solution to the Schneiderian membrane before the burning—the pain and itching of the eyes and eyelids ceased at once; and although the itching and pain returned the next day, they never afterwards were so intense.

I ordered all medication of the eyes and eyelids discontinued, only allowing her to apply the 4 per cent. solution of cocaine in case the pain and itching should return in a more troublesome manner. The cautery applications were made as often as her physical condition and the local disturbances after each burning would allow, which

was about every five or six days; the annoying eye symptoms gradually disappearing as the treatment of the nasal affection progressed, although the cocaine applications to the eyes and lids had been discontinued. The only trouble the patient experienced was when, on account of her entire disregard of the weather, the exposure to dampness or even a hard rain would produce a slight return of the itching. I treated the case until January following, when the patient went to Florida, to remain during the rest of the winter. I met the husband about a month ago, and he stated that Mrs. P. got along very well, had no itching of the eyes, except twice, for a short time, the result of cold, but was now in good condition and able to do her work.

The above is one of the many cases I could cite, but as it is so strongly marked in its reflex phenomena, it will be sufficient to fully illustrate the relations existing between ocular and nasal affections, and the necessity of a thorough inspection, and often a proper and vigorous treatment, of the latter, if we expect to benefit the former.

CLINICAL STATISTICS.—A WORD IN FAVOR OF FREE DISPENSARY AND HOSPITAL WORK.

Read in the Section of Obstetrics and the Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ELIZA J. C. MINARD, M.D.,
OF BROOKLYN, N. Y.

In presenting these statistics I am confined to the diseases of women, though the plea includes all other departments of the practice of medicine.

The injustice done to young practitioners and druggists through the loose way of dispensing medical advice and medicines, has been ably discussed of late, and the feeling is growing fast in favor of the belief that all dispensaries and hospitals which receive State aid, should be conducted for the benefit of the patient, the improvement of the post-graduate physician, and the advancement of medical science.

In the treatment of a class, who, by force of circumstances and misfortune are compelled to seek aid from these charities, no branch of the profession calls for more sympathy than that of the diseases of women. In every misfortune of life the burdens rest heavily upon woman. Selfishness and injustice; ruin and hunger; dirt and contagion; sickness and suffering; crime and agony; hopelessness and suicide, follow closely upon poverty and adversity. The working-man has a heavy tax laid upon him when the wife and mother sickens. Any help extended to him is a benevolence untold and an aid to the State by preventing pauperism and crime.

I have collected the result of three years' earnest, painstaking study; endeavoring always to keep in view in my investigations and treatment, the idea of mitigating human suffering. From 2,700 women treated in the department for diseases of women in the Brooklyn Eastern District Dispensary and Hospital, of which I have the honor of being the physician, I have selected 1,000, mostly of American birth, because of the reasonably satisfactory history to be obtained.

From these I present in a tabulated form statistics on menstruation:

1. Number of patients.
2. Age of patient, and
3. Pain at beginning of monthly period till marriage or childbirth.

Age of Patients.	No. of Patients.	No. Having Pain.
9 years	2	2
10 "	12	11
11 "	28	8
12 "	95	40
13 "	193	104
14 "	191	111
15 "	140	83
16 "	161	80
17 "	52	29
18 "	45	30
19 "	18	9
20 "	7	3
21 "	3	0
22 "	1	0
	938	510
Uncertain	62	
	1,000	

In looking at the sum total of this table one finds that nearly one-half of our girls enter womanhood in a crippled condition—so to speak,—which renders marriage in its highest sense a problem of the gravest possibilities. Again, it shows that at the age of 13, 14, 15 and 16 years the majority of girls menstruate, at the time when school-life demands the closest mental labor, or they begin to labor for their own support and that of others, or, worse, are put into the hands of dress-makers and are corsetted to form a figure for a future social positions. They are never to frolic or use the hands or feet in any employment which may cause them to grow u-n shapely.

Cases of dysmenorrhœa are seldom systematically treated in young girls. They are taught to bear the pain, sometimes as agonizing as childbirth as their mothers have done before them, trusting, *sub rosa*, to marriage for relief, when matrimony should by the last act thought of till a cure has been performed through the best of medical advice. But the family is formed in the face of these grave possibilities. The foundation of domestic life with all the happiness due such a state, is laid with high hopes on a frail basis of ill health. The first birth may relieve the dysmenorrhœa, but in many cases the wife becomes an invalid, unable to cope with the duties of marriage, a trial to her husband and no comfort

to herself,—after recriminations and protestations she seeks medical aid. The family physician is not a specialist and she is treated on general principles, and if she has no means she seeks the free dispensary clinic. Her marital misery calls out the deepest sympathy of her medical adviser. Willing to assume two-thirds of the ills of marriage she here takes all the blame, never harboring a thought that the fault may not be hers. Gynecologists know only too well with what persistence she will follow out treatment and submit to operations to be relieved of her disability.

Of 161 cases of sterility, non-development and displacement have been the most frequent causes. Stenosis, endometris, pelvic inflammation, tubal and ovarian diseases and the complications of tumors make up the list. One finds here ample field for testing the teachings of the schools. Rapid dilatation and the curette judiciously used are indispensable in the treatment. Electricity, not too long applied at one sitting, adds another valuable therapeutic remedy. These, together with the routine treatment, well known to every specialist, forms the repertory of gynecology. Here allow me to add a word in regard to electricity in the treatment of disease. The meagre statistics give no conception of its therapeutic value. The expensiveness of a good working battery, the difficulty of keeping one in order, and the time it takes to apply it, places it out of the reach of the busy practitioner, and it is quite out of the question in the usually badly equipped dispensary. But here is where statistics could be made, and where all records should be open for inspection and all operations and treatment witnessed by the keen-eyed criticising student.

Of 712 cases of midwifery no deformity of the pelvis was present to warrant any doubt as to the results of normal labor. This seems a noticeable coincidence, as I have been seeking cases where surgical interference might be compulsory, and thus justifiable. I have yet to find my first case for cæsarean section or eleoelectrotomy.

These midwifery cases are mostly in the hands of midwives in this large and out-lying district of Brooklyn, where the German population predominates. There are some well-trained midwives who have been taught in the schools on the Continent, as many have witnessed when abroad. They can manage difficult presentations, make correct diagnoses, turn, control hæmorrhages and do many things with their trained fingers which doctors would do with instruments. But most of them are ignorant and abandon the case when difficulties present themselves, hence the physician when called finds complicated labor which might have been made normal with proper care in the beginning. This system of midwifery may account for the large number of still-births said to be recorded at the Board of Health.

They came usually to have their "time taken," and here the most modern methods may be tested and demonstrated to great advantage. Hegar's test for early pregnancy is quite easily carried out in detail. If the patient be instructed to wash out the rectum with plenty of water before coming to the clinic, the rest of the preliminary work is quickly done, the thinning of the uterine walls between the neck and the body of the uterus may be demonstrated when present.

The opportunity to diagnosticate presentations externally by the bimanual and shoulder method is of untold value for safety to the patient and experience to the physician, as the touch cannot be too well cultivated in obstetrics and gynecology.

Of 146 cases of laceration of the cervix 92 had left side laceration, 14 had the right side laceration, 31 double laceration, and 9 the stellated form. The last named gives much trouble as the appearance does not indicate surgical interference, yet when pulled apart with the forceps the jagged, bruised parts will heal quickly if trimmed off and a few stitches put in. In the interest of the patient I always advise operation, as subinvolution, misplacement, endometris, and one child sterility, accompanied with all the horror of dyspareunia are often quickly cured. The patient who presents herself in this condition is as completely unsexed as Tait's operation can make her. The desire is destroyed to fill the highest function of her womanly nature, thus causing her to hate motherhood and her marital duty. Cases of procidentia in the young and old, give the clinical physician most unsatisfactory results. The unrepaired perineum of long standing, the detachments of the vaginal walls in part or whole, together with the atrophy or subinvolution of the uterus soon renders the prolapsus a complete procidentia with recto- and cystocele complications. Hegar's operation for rectocele has given the best satisfaction whereby a pessary may be worn, but most operations vex the soul of the operator beyond endurance at times. Alexander's operation does cure some cases according to authority, and one awaits with hope for the time to elapse to learn if it is to be the successful mode of cure for all cases where there are no adhesions even with the aid of a pessary. I can report but one case: Two years have elapsed since the operation and she seemed quite cured when last seen at the clinic. The operation was a perineorrhaphy colporrhaphy and a double Alexander.

The early repair of the torn perineum is now considered such a minor operation that a student in midwifery should attend to it without unnecessary delay.

Capital operations comprising abdominal section are of little practical value to the clinical physician unless a special ward of a hospital is at his disposal. The hospital attached to this dis-

pensary is an emergency one for surgical cases only. Therefore I have had to send all cases for abdominal section to such hospitals as have special facilities for such operations, and thus can only be a spectator of my own cases. Still, the education to make a correct diagnosis repays me for all trouble.

The proximity of New York to this part of Brooklyn, and the notability of successful operators, permits these cases to find their way into the great palatial hospitals of New York, with their princely endowed free beds, thus swelling the list of the already skilled operators in which that city abounds; one death more or less making little difference in the monstrous whirlpool of human misery, only so the case contributes to science in a scientific way.

Of all the brilliant triumphs of gynecological surgery, the operation known as "Tait's," or the removal of the uterine appendages, is unsurpassed in importance for the benefit of womankind. Fought and retarded as it has been through jealousy and undue conservatism, it has taken sixteen years to make and register a record that cannot be overturned. The prejudice against "mutilation"—proper in itself—is so easily put forth as an argument that the necessity for the operation is not yet fully appreciated in all quarters of the profession. No true physician will do any operation unnecessarily. When the wretched existence of a woman whom uterine disease has already unsexed, can be made bearable by this operation only, and when the highest prerogative of her sex is already denied, how can any scientific medical man deny to her the only means by which she has a large chance to so recover that her existence may be endurable, and much happiness obtained outside of marriage and offspring. As this is a disease of maturity, the sufferer has the right of choice, and should be advised to select the best and safest operators the surgical world affords.

As to the deformity of the menopause, most of the good works done by woman are done after that age, and the question might arise here: if the ovaries be removed after maturity, will the woman take on all the appearances of age which the menopause produces when the ovaries die naturally? Will it produce more nervous trouble than the amputation of other parts? I have only recent cases to draw upon and therefore cannot report. One case of "Tait's" of three years' standing, though embarrassed by gonorrhæa, keeps fresh and is more happy-looking than before the operation.

Cancer of the cervix has not often been met with, and when seen has been too far advanced for any but palliative treatment.

Strange cases like floating kidney, spleen, and other rare cases I will not report for want of time, and because there are too meagre statistics.

Tumors (fibroids) which I have treated with electricity, have all been improved. The size has diminished, the general health improved, and constipation been relieved.

The complications which embarrass all these cases deserve a separate paper, but time and place will not permit.

Every case which presents itself has a place and a history by itself, and at times overwhelms the physician with the magnitude of the work.

To the post-graduate physician, and all physicians must be such for life, there is no place like one of these institutions to perfect him in the practice of medicine. Never in a long lifetime of general practice will such material present itself to sharpen the senses and put eyes into the ends of his fingers. The places should be sought and filled conscientiously and should be accompanied by the enthusiasm of youth.

The practice of pure medicine is made up of little things which go to form the great ones. The treatment of disease requires an exactness of the perceptive faculties combined with judgment and understanding. Life is so short that one needs to become equipped early with such knowledge if he would contribute to scientific literature.

In this, the highest of the professions, "rank imposes obligations." The higher the standing, the deeper the learning, the more skilful the knowledge, the more the physician owes to the rising profession and to mankind.

In order to facilitate post-graduate education, and thus benefit the public by a better educated class of physicians, the free institutions must be remodeled. Masters must be put in charge, and the keen scrutiny of the advanced pupil will be on the alert for hidden points of interest. It is a well known fact that clinics attached to medical schools give the patient better treatment and more attentive care than those not so well favored. The question may here arise, ought pay beds for the rich to be allowed in hospitals which receive State aid? There may be a low fee for those able to pay, but let the rich sick, with his large fee, fill the private hospitals of the professors whose skill deserves it.

Pathological investigation hand in hand with practical medicine, together with the millions which rich men are placing at the disposal of the scientific world, ought to do much toward the advancement of science and the improvement of the human race. Yet the old landmarks in treatment must not be forgotten. These "still are an authority."

In our profession there is much drudgery which must be performed patiently. Years must elapse before the physician will reap the reward of his diligence, become the confidant of his peers, and the recipient of fees commensurate to his skill.

The masters of the Old World have visited us in the past few years. If they brought to us

much that is true, they took away much that is practical. The Old World has given to science a few great medical minds, the New World has given *many* of more than mediocrity. There is no reason why the American surgeon should not lead the world. His keen eye, his steady nerve, his mechanical fingers, his noble nature open to competitive work, and with all his kindly, sympathetic nature toward the suffering, render him eligible. The field is full of material, and more good operators are needed, and where can the student of science learn but at the bedside of the sick poor, where to save life is first to be learned; afterwards will come good surgery.

Surgery has made vast advances in all departments for the past few years—so much so as to seem to leave other departments behind. But the physician follows closely by the side of the surgeon, and with authority says, Thus far thou shalt *cut*, and no further. When these two are combined in one person, the man is a perfect physician. Scientific knowledge is making such strides that there are no places for laggards. The masterly work done in our own country in the past two decades is a greater plea for better planned and endowed hospitals and clinics, better equipped teachers, better prepared students, than I can give from statistics in my narrowed field of labor.

Those brilliant masters in medicine who of late have "wrapped their robes about them and lain down to pleasant dreams," and to whom we all owe so much as teachers, were not idlers. They did not coquette with science, but courted in earnest, till death wedded them to immortal fame. On the tablets of time their names will be written with those of Hippocrates, Galen, and that host of immortals, as together with Sydenham and our own Benjamin Rush, examples for emulation to the coming multitude of students to whom is left the unfinished work, viz.: to advance medical science, and open every avenue for advanced study to all, irrespective of condition, race or sex.

The rhythmical lines of our American poet will apply to the art of medicine as to other departments of study:

> "The heights by great men reached and kept,
> Were not attained by sudden flight,
> But they, while their companions slept,
> Went toiling upward in the night."

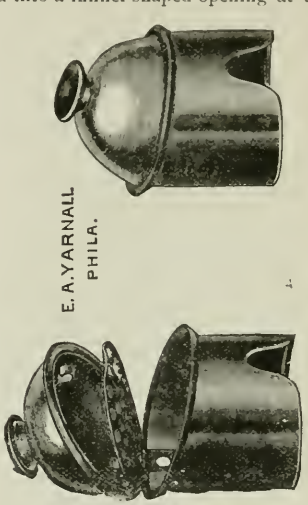
The Portuguese Government has ordered by a decree, dated March 13, that saccharin, whether alone or mixed with any other product, shall be sold by chemists only on the prescription of a legally qualified medical man. Every contravention of this enactment, as well as the employment of saccharin in the manufacture of sweetmeats and drinks, is made punishable by definite penalties.

A NEW INHALER FOR THE ADMINISTRATION OF ETHER OR CHLOROFORM.

Presented in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY FRANK WOODBURY, M.D.,
OF PHILADELPHIA.

With this inhaler, the construction of which will readily be understood from the accompanying cut, the anæsthetic to be administered is dropped into a funnel-shaped opening at the top



and falls upon absorbent cotton contained in a chamber beneath, where it is confined by a perforated hinged diaphragm. The advantages obtained are cleanliness, convenience and cheapness.

The inhaler is manufactured by E. A. Yarnall, of Philadelphia.

CHRONIC THROAT AFFECTIONS OF RHEUMATIC ORIGIN.

Presented to the Ohio State Medical Society, May 23, 1889.

BY MAX THORNER, M.D.,
OF CINCINNATI, O.

Acute tonsillitis and pharyngitis have been known, even by the early writers, to be sometimes local complications of acute rheumatism. These manifestations in the throat are either of a prodromic nature, followed sooner or later by an attack of articular or muscular rheumatism, or they are established after other parts of the body have been affected, or the rheumatic throat trouble may be idiopathic. Thus we hear and read of angina rheumatica, tonsillitis rheumatica, etc.,

and have become used to treat these affections as manifestations of rheumatism, with results that are mostly very satisfactory.

Chronic rheumatic affections of the throat are little known, or at least described. Yet there is no doubt that we have, not infrequently, to deal with obstinate throat ailments that are associated with or due to chronic rheumatism. The first who called attention to this form of chronic laryngitis was Dr. E. Fletcher Ingals, of Chicago, in a paper read before the Laryngological Section of the Ninth International Medical Congress at Washington, in the year 1887.[1] Since that time I have paid more particular attention to this variety of laryngitis, and am able to corroborate the statements of Dr. Ingals in all essential points; in fact I could distinguish a form of chronic pharyngitis and laryngitis that was evidently due to rheumatism. These affections are, as a rule, very obstinate, and resist every treatment except that which is directed against the diathesis.

The most prominent symptom of this affection is pain either in the pharynx or in the larynx, or in both. We may, therefore, follow Ingals in calling it chronic rheumatic sore throat. If we take into consideration the nature of rheumatic inflammation in general, we can readily see why certain regions of the throat have apparently a predilection for localization of pain and other symptoms. Rheumatism is preëminently a disease of the motor apparatus. We may, therefore, expect to find the seat of the rheumatic affections of the throat in the numerous small muscles of the same, and the fibrous tissues connecting the muscles with the bones and cartilages, and with each other; and, indeed, the anatomical conditions for such affections are plentiful in this region. The muscular cover of the framework of the neck consists of a number of small muscles with comparatively extensive fibrous and aponeurotic connections, and these latter structures seem to be greatly predisposed to the localization of the rheumatic attack.

Regarding the etiology and pathology, not much has been ascertained as yet. We know that the chronic muscular rheumatism has a somewhat doubtful position in our classification of diseases; and yet it is a well known fact that we meet frequently with painful muscular affections which we are accustomed to term chronic muscular rheumatism, even if it were only for want of a better name. Pain in certain groups of muscles, as well after use as on pressure, exacerbations of the soreness during changeable weather, remissions during fine weather, no visible or palpable changes of structure, the absence of fever, the fact that anti-rheumatic treatment is the only one that affords relief, and the absence of any other plausible cause of the pain and impaired action, are the principal reasons of such a diagnosis. Thus we leave any speculations regarding the nature of the specific poison out of consideration. Taking this view, we may well accept the term chronic rheumatism, of which Dr. T. J. Maclagan, in his treatise on rheumatism,[2] says: "It is due to the presence and direct action of the rheumatic poison, and is not necessarily, or even usually, accompanied by any perceptible change in the textures involved. It consists simply in rheumatic disturbance of the affected tissue. It differs from the acute and sub-acute form, not in nature, but in degree, and sometimes in the special textures involved. It is a true rheumatic attack, in which the morbid process and local disturbance are not sufficiently marked to raise the temperature or to lay the patient up. The textures involved are the same as those which suffer in the acute and sub-acute forms, with the difference that the fibrous aponeuroses and muscles are more apt to be affected. Indeed, for clinical purposes cases of chronic rheumatism might usefully be divided into two classes—chronic articular rheumatism and chronic aponeurotic or muscular rheumatism."

The principal symptom of chronic rheumatic sore throat is, as the name implies, pain, localized in and about the pharyngeal and laryngeal regions, sometimes extending from the faucial region towards the jugulum. However, in most of the cases that have come under my observation the pain did not extend over so large a surface, but was more frequently limited to small circumscribed areas. There are a few spots which seemed to be predisposed to the rheumatic attacks, and these were the posterior pillars of the fauces, the root of the tongue (an analogon to the acute form of lingual rheumatism, mentioned by Henry T. Butlin), the whole region over the hyoid bone, especially the region corresponding to the location of the greater cornua, and the lateral parts of the thyroid cartilage. The anatomical conditions of the region around the hyoid bone, where the fibrous attachments of so many small muscles are centred, and of the outer surface of the thyroid cartilage, with the insertion of several muscles, explain readily the cause of this predilection. These rheumatic pains are intermittent, and worse during changeable weather. On pressure we find often exceedingly painful spots, particularly in the region between the hyoid bone and the trachea. Deglutition is generally, phonation sometimes, difficult and painful. The whole neck, including the large muscles, may be affected, so that we have a veritable myalgia cervicalis chronica, and even such an impairment of action may result that the head is turned more or less towards one side, in which case we have a form of torticollis rheumaticus

[1] Trans. Ninth Internat. Med. Congress, Washington, D. C., 1887, Vol. iv.

[2] Rheumatism, its Nature, its Pathology, etc., by T. J. Maclagan, M.D. New York, 1886.

chronicus. In addition to the pain, the patients complain often of a dry or burning sensation in the throat, and in a few of my cases the sensation of a foreign substance was very troublesome to the patient. Though some of the patients experience fatigue when speaking, I always failed to notice more than slight huskiness of the voice.

Locally there is more or less congestion of the mucous membrane, which is sometimes limited to small, circumscribed spots. These latter are always very sensitive. As a rule the congestion and swelling are not very pronounced, and may even be missing altogether. Erosions, ulcerations or neoplastic formations are never found in the throat. The vocal cords may or may not present such a condition as is found in chronic laryngitis, and their approximation was noticed to be somewhat impaired in a few cases, where one of the principal complaints of the patients was the fatigue experienced after any attempt at speaking. I never saw a case among these chronic affections like that of Laranza,[3] where, during an attack of acute laryngeal rheumatism, the intrinsic muscles only of the larynx were affected, the vocal cords being fixed in the middle line, which resulted in a complete aphonia. In this case all pain was absent.

So far only such cases have been under consideration where the seat of the rheumatic affection was either in the muscular or in the fibrous textures surrounding the pharynx and larynx. It has been shown, however, by Dr. Major, of Montreal, that inflammations of the crico-arytenoid joint also are sometimes caused by rheumatism.[4] He reports a case where, following an attack of acute rheumatism of the wrist and elbow joints, he could diagnosticate a rheumatic inflammation of the crico-arytenoid joint, with fixation of the vocal cord at full inspiration, and tenderness over the crico-arytenoid region. Such cases of acute articular rheumatism may, no doubt, at times continue in the chronic form, causing frequently anchylosis of this joint, in addition to such symptoms as we may find in the muscular form of this affection.

The diagnosis must, in addition to the local symptoms, be chiefly based on the history of the patient. Most of them have suffered from other manifestations of rheumatism before, or may have inherited a rheumatic diathesis. Sometimes the occupation exposes the patient to so-called rheumatic influences, as in case 1, reported below. However, I have seen cases where rheumatism could not be traced from the history or the occupation of the patients. The pain is different in character from neuralgic pains, and yields only to certain treatment, which allows us, eventually, to make the diagnosis *ex juvantibus aut non juvantibus*.

In fact the effect of treatment is sometimes the best aid in ascertaining the diagnosis. Local applications alone have failed in every instance, in my hands, to effect a cure or to afford more than temporary relief. In cases where the congestion was very pronounced, 5 to 10 per cent. solutions of nitrate of silver, or 3 to 5 per cent. solutions of chloride of zinc, used as a pigment, proved useful. Sprays were sometimes very effective in relieving the painful sensations temporarily. I have used with good results the solution of morphia, grs. iv; carbolic acid and tannic acid, grs. xxx; glycerine and water, āā ʒiv, as recommended by Fletcher Ingals.[5] Also counter-irritants applied to the skin above the painful spots, in the form of tincture of iodine or sinapisms, were used to advantage.

The best results I had, however, were from the administration of internal remedies. I have used in nearly all cases salol or salicylate of sodium in large doses, and found their action in more than half of my cases satisfactory, though not as prompt as in the acute form of rheumatism. When they failed, I seldom could derive benefit from any other remedy, though iodide of potassium, bromide of potassium, extract of phytolacca, oil of wintergreen, etc., as recommended by Fletcher Ingals, may be tried. In very obstinate cases I saw the best results following the application of the electric current, or the use of massage of the neck, or both together. Massage seems to be very effective in stimulating the circulation in the superficial as well as the deeper lymph vessels of the neck, as shown by Dr. Averbeck.[6] Electricity I have used in the form of the galvanic or Faradic current, and had good results in cases that were not amenable to any other treatment.

I have seen altogether nineteen cases which I would consider as suffering from chronic rheumatic sore throat. Thirteen of these were men, six women. Their ages were between 20 and 47 years. Three of the cases are very typical, and I shall abstract them in brief from my note-book.

Case 1.—F. K., 37 years of age, and ice carrier on an ice wagon, consulted me July 17, 1888. He had had a sensation of constriction in his throat since at least one year, and of late a decided pain, which was localized on both sides from the posterior pillars of the fauces towards the hyoid bone. He had never had rheumatism, but his father had been a sufferer from this disease for years. His occupation often compelled him to go, when overheated, inside the enormous ice-boxes in hotels. There was a well defined redness on both sides of the pharynx, extending downward towards the bottom of the pyriform sinus. The whole region over the hyoid bone was extremely tender, especially the cornua. Lo-

[3] Quoted from Dr. J. Solis-Cohen's abstract in the American Journal of the Medical Sciences, January, 1889.

[4] Affections of the Crico-Arytenoid Articulation. N. Y. Medical Journal, Sept. 24, 1887.

[5] Trans. Thirty-eighth Meeting Illinois State Medical Society May 17, 1888.

[6] Die Kehlkopfmassage. Deutsche Medizinalztg., 1888, p. 397.

cal treatment was unavailing. Salol in 15-grain doses every three hours relieved him as long as he continued taking it, but did not prevent frequent recurrences. Then I used the Faradic current daily on both sides of the larynx, and continued salol and local applications of chloride of zinc in 3 per cent. solution. Patient was discharged after two weeks' treatment and has been well since.

Case 2.—Miss M. R., 21 years of age, consulted me Feb. 12, 1888. She had had sore throat since ten weeks. Gargles and home remedies had failed to relieve her. When 19 years old she had suffered from articular rheumatism, which had been preceded by a very sore throat. The whole pharynx was moderately congested, the tonsils were slightly enlarged. The base of the tongue was especially painful. Local application of chloride of zinc and the use of detergent and sedative sprays relieved her greatly, but not entirely. A few weeks thereafter she was worse again. I then had her take salol in addition to the local treatment, which effected a cure in four days. She was free until last fall, when, after exposure to rough weather, she contracted the affection again. The same treatment had the same result. This time I continued the salol for two more weeks and had her take an iron tonic, she being quite chlorotic at the same time. She has had no recurrence since.

Case 3.—A married lady, 40 years of age, of pronounced rheumatic diathesis, was first seen by me Nov. 3, 1888. Had been suffering with rheumatism for many years, and was not entirely free from it at the time she consulted me. She had noticed, during the changeable weather of the previous spring, that her throat was constantly sore; and, while she had been free from any inconvenience during the summer, she was greatly annoyed since changeable weather had set in. Pain was complained of on both sides of the throat. The whole neck felt sore, deglutition was slightly painful, and prolonged speaking tired her soon. There was locally only slight congestion, especially over the arytenoid cartilages. Action of the vocal cords was unimpaired. I employed several local applications, and gave internally salol and afterward salicylate of sodium, with but little relief. These two drugs had also failed in regard to her other rheumatic trouble. Iodide of potassium seemed to help her for a short while only, and massage as well as electricity gave her only temporary relief. Her case seemed to be not amenable to treatment. Finally, after she had spent a number of weeks at the hot springs of Mt. Clemens, Mich., she returned apparently cured.

These three cases show the average type of this class of affections. They are mostly all obstinate, and recurrences are common. Yet, with the treatment indicated, we may hope to get satisfactory results in a class of cases which otherwise might resist all our efforts, or might try our patience as well as that of our patients well-nigh to exhaustion. And this is the reason that I believe we may number them among the manifestations of chronic muscular rheumatism.

MEDICAL PROGRESS.

CONTRIBUTIONS TO THE STUDY OF SOLID OVARIAN TUMORS.—MADAME N. N. OSTROGRADSKAIA calls attention to the rarity of solid tumors of the ovary, and dwelling particularly upon the fibromata, and citing the various opinions which have been held with regard to their structure. Some authorities consider them as purely fibrous tumors, others admit the existence of muscular fibres in small quantity, so that Virchow proposes to call them myo-fibromata. The writer, having had opportunity to study three cases at the clinic of Prof. Fenomenoff, of Kazan, reports the results of her histological examinations. She endeavors to answer the question whether the normal ovaries contain smooth muscular fibres. She has examined the ovaries of the new-born infant, of the adult woman, and of the lying-in woman (the specimen being taken from a living woman during a Porro's operation). Muscular tissue is always found in proportion increasing from infancy to adult life, and is greatest during gravidity. It is presumed that the muscular fibres are derived from the ovarian ligament. The tumors develop from the internal to the external border of the ovary.—*Gaz. de Gyn.*

PHENACETIN AS AN ANTIRHEUMATIC.—DR. COLISCHONN, of Frankfurt, believes that phenacetin has not hitherto received its proper dues as an antirheumatic remedy, because it has been given in too small doses. Since the introduction of large doses he has secured very satisfactory results, and no longer employs salicylic acid, which is often objectionable on account of unpleasant secondary effects. Colischonn himself on one occasion took 120 grm. of salol in three weeks without producing any effect, while phenacetin, in two doses of 2 grm. each taken in the afternoon was sufficient, as a rule, to promptly relieve an attack of musculo-articular rheumatism in his own person within one or two days. Phenacetin, with a single exception where it was discontinued on account of vomiting, was always well borne by the digestive organs, and aside from a few cases in which there was profuse sweating after four doses of 1 grm. each, its administration was free from disagreeable secondary effects. Fever promptly abated, and the temperature was often lowered by the second or third day to from ½° to 1° below normal, the pulse being also

slowed from 10 to 15 beats. An exanthema was never observed.

For practical purposes the writer has divided rheumatism into four different forms. As shown by the following table the therapeutical effects were quite different in the various classes of cases. In cases of chronic articular rheumatism with deformed joints phenacetin proved a good remedy to relieve pain although it did not cure. The results of treatment are shown in the following table:

1. Acute rheumatic polyarthritis with fever; twenty-nine cases treated, nineteen cured.

2. Acute rheumatic polyarthritis without fever, but with swelling of the joints; nineteen cases treated with twelve cures.

3. Muscular rheumatism without fever (light cases excluded); twelve cases treated, with eight cures.

4. Musculo-articular rheumatism without fever; ten cases treated with two complete cures.

Acute articular rheumatism responds most readily to phenacetin. The afebrile varieties are more obstinate, but the most refractory of all are the musculo-articular cases, beginning slowly and depending upon changes of the weather; for such cases sweat-cures and *sool* baths are more effectual than all medicaments.

The writer recommends at least one trial of phenacetin in every case of rheumatism, four doses of 0.75 grm. each, or better, 1.0 grm. being given during the morning or afternoon, or two doses of 2.0 grm. each may be administered.—*Deutsch. Med. Woch.*

Treatment of Pneumonia by Means of Injections in the Trachea.—Pignol has treated three cases of pneumonia by giving aqueous solutions of naphthol in the proportion of 0.2 naphthol, 1,000 of water. The quantity injected was from 250 to 350 cm., the sittings lasting for half an hour. The injections were well borne, and a marked diminution of dyspnœa was noticed after each one. The writer predicts brilliant results for this method in cases of pulmonary affections of an infectious nature.—*Ther. Monatshefte.*

Sterilization of Catgut.—At a meeting of the Society of Physicians, of Zurich, Dr. C. Brunner demonstrated the results which he had obtained in disinfection, experiments made with catgut infected with the germs of splenic fever. He concludes that a 1 per mil. solution of sublimate suffices to quickly and easily render catgut aseptic. In the discussion which ensued, Prof. Krönlein said that since Kocher had abandoned catgut many a surgeon had become suspicious of it. He himself could not remember a case in which there was any well grounded suspicion for infection from catgut, though others have published contrary opinions. He regarded Brunner's experiments as decisive in settling a hitherto disputed point.—*Ther. Monatshefte.*

Compression of a Nerve by a Cicatrix.—At a recent meeting of the Société de Chirurgie of Paris, Gerard-Marchant presented a patient who had received a wound from the horn of a bull which was followed by marked motor and sensory disturbances. The patient was unable to walk and the triceps was greatly atrophied, although the subcutaneous fat remained well developed. The sensory troubles consisted of anæsthesia of the anterior surface of the thigh in the region supplied by the external musculocutaneous branch of crural nerve. Upon incision of a cicatrix present the crural nerve was found to be compressed by the cicatricial tissue; the nerve was disengaged however, and from this moment a marked improvement took place. Healing occurred by first intention and was complete in twelve days; the patient improved in a very satisfactory manner and was soon able to take long walks. At the time the case was reported there remained only a small area of anæsthesia the dimensions of which were scarcely half what they had been.

Treatment of Endometritis by Means of the Curette.—In the *Société de Chirurgie* M. Pozzi recently compared the methods of treating endometritis by means of the curette and by the application of chloride of zinc. He finds that the latter method has been employed in Germany and that it has relieved a certain number of cases. As to its objections, it has been alleged that it gives rise to stenoses appearing two or three years after treatment. Another objection offered is that it is impossible to control accurately the extent of its caustic action. In using a caustic as powerful as chloride of zinc there is room to fear the formation of fibrous tissue with a true sclerosis, which may possibly give rise not merely to stenosis of the cervical region, but even to closure of the openings of the Fallopian tubes. For these reasons the author believes that the method of curetting is safer. During seven years the author has applied the latter treatment successfully in more than 500 cases. He regards the preliminary dilatation of the uterus as useless except in cases of multiparæ and those in whom there are displacements, and even here it is to be employed rather to correct the direction of the organ than to dilate it. Immediate dilatation is sufficient. The only form of curette which he employs is one with blunt edges, and he does not mop out the cavity, regarding sublimate irrigation as more applicable. He also rejects the intra-uterine tampon, employing only the vaginal form. As regards the indications for the operation, he finds that it succeeds perfectly in cases

of hæmorrhagic and catarrhal metritis, but if these are accompanied by extensive lesions of the cervix it is also necessary to perform Emmet's or Schroeder's operation. Curetting alone is often insufficient in chronic cases; and in these cases he often practices, with the greatest advantage, the biconical amputation of the cervix. If the metritis is accompanied by salpingitis, it is necessary to determine the character of the latter; curetting indeed has no beneficial effect in this direction except in cases of acute catarrhal salpingitis; on the contrary, it is dangerous in suppurative cases.—*Le Bul. Méd.*

Is Iodoform an Antiseptic?—Tilanus reports experiments which have been confirmed by the statements of Heyn, Rovsing, Schede, Lübbert, de Ruyter, Baumgarten, Duhring, and others. Culture media of peptone gelatine and peptone agar containing a large amount of iodoform in suspension, were inoculated with decomposed culture gelatine containing microörganisms of indeterminate character; the result was a very prolific vegetation. A similar result was obtained with the micrococcus putridus. Commercial iodoform added to the same kind of culture media and to bouillon, produced manifold cultures in all cases. The staphylococcus pyogenes aureus was not restricted in its vital activity under similar conditions. The writer therefore cautions all who use iodoform to employ it without the concomitants of other antiseptic agents, although he does not deny that iodoform may perhaps be decomposed by the secretions of wounds so as to set free the iodine, and thus exert an antiseptic action.—*Cent. für Gyn.*

The Effects of Diphtheria upon the Heart.—Doeblin discusses the various investigations that have been made relative to cardiac affections associated with diphtheria, and reaches the conclusion that cardiac thrombosis and endocarditis are not to be regarded as the sequelæ of diphtheria and the causes of fatal collapse, the former, because it only occurs after death, or a very short time before death; the latter, because in the first place it has been so regarded by only a few, and in the second place because it has been proved that granulations such as have been found upon the auriculo-ventricular valves, and regarded as proof of endocarditis, have been in the hearts of children who died from various diseases. The important fact to recognize is the impairment of the cardiac tissues, which is recognized macroscopically by the softening of the muscular structure, by numerous ecchymoses, by dilatation and thinning of the walls; microscopically by intermuscular nuclear proliferation and deposition of pigment flakes, by waxy degeneration of the muscle fibres with granular contents, as well as by fatty degeneration of greater or less extent. This myocarditis should be regarded as a result of the penetration of the diphtheritic contagium into the heart-muscle, a view which is explained by the experimental investigations of Letzerich and Rosenbach.

As regards the clinical appearance of this heart affection, the author distinguishes between cases where, at the height of the disease, paralysis of the heart occurs, and those other cases in which fatal collapse ensues only long after recovery had occurred; in the latter cases a very careful prognosis should be given; the cardiac paralysis is usually ushered in by severe vomiting. Physical examination of the heart usually gives negative results. The author raises the question whether the paralysis of the heart arises solely from the myocarditis or whether it may also proceed from the nervous system, and concludes that affection of the vagus is often to be regarded as the principal cause of the fatal issue.—*Centralb. für Klin. Medicin.*

Pneumonia and La Grippe.—Gaucher has reported to the *Soc. Méd. des Hopitaux* two autopsies made on subjects who died of pneumonia following *la grippe*. In both cases the macroscopical appearances were those of lobar pneumonia with gray hepatization, but the microscope showed the presence of an extensive pseudo lobular broncho-pneumonia with an abundance of leucocytes in the alveoli and bronchioles. The bacteriological examination revealed neither pneumoccus nor streptococcus; colonies containing a small bacillus were found but to this, however, little importance was attributed. Gaucher has seen several cases of intestinal grippe which simulated typhoid fever at the outset. Among the nervous forms the author observed a case in which there was a neuralgia of the trigeminal nerve which yielded only to sulphate of quinia; he also saw a case of pseudo-meningitis, in a young girl, which disappeared at the end of twenty-four hours; a case of præcordial angina with irregularity of the heart's action during convalescence; also cases of suppurative otitis, mastoiditis, and thyroiditis.

Vomiting of Pregnancy.—Gottschalk, of Berlin, recommends menthol in severe cases of vomiting of pregnancy. His formula is as follows:

Menthol.	1.0
Spts. vini	20.0
Aq. dest.	150.0

One tablespoonful every hour.

With this he obtained an excellent result in a case in which three months before he was obliged to induce labor on account of vomiting, and conception occurring again he combatted the renewed vomiting in vain from the sixth to the thirteenth week.—*St. Petersburger Med. Woch.*

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SATURDAY, MAY 10, 1890.

THE RELATION OF EYE STRAIN TO FUNCTIONAL NERVOUS DISEASES.

DR. D. B. ST. JOHN ROOSA has made an important contribution to this subject in a paper read before the New York Academy of Medicine, in which he takes strong ground against those who find the almost exclusive cause of epilepsy, chorea, and hysteria, in over-exertion of the muscular apparatus of the eye. The subject divides itself naturally into two topics: errors of refraction, causing strain of the accommodative, apparatus, and want of equilibrium in the external muscles of the eyeball. With regard to the former, he calls attention to the fact established by him in 1877, and subsequently confirmed by C. S. BULL, that nearly all persons who are not myopic are either hypermetropic or astigmatic, and consequently, that the frequency with which these conditions are found in epilepsy and chorea is of no significance. Of late years, DR. STEVENS, the most enthusiastic advocate of the hypothesis under discussion, has laid most stress on want of balance in the external muscles. This led Dr. Roosa to institute an examination into the state of these muscles in persons who were not aware of any trouble with their eyes, with the result that out of one hundred and three subjects examined, only seventeen were found to have muscular equilibrium. The relative frequency of the various forms of muscular insufficiency was about the same as has been reported in cases of nervous disease, and their presence in such cases would seem to be nothing surprising, or, necessarily, important.

He also gives a table of the symptoms complained of by 3,584 patients who came to have glasses fitted. Nervous troubles formed but a small part of their complaints, and only three cases of chorea and none of epilepsy are reported. It might be objected that persons suffering from such diseases would be most likely to consult a neurologist, although, but, as Dr. Roosa suggests, it is singular, in view of the frequency with which chorea and epilepsy are said to be dependent upon ocular troubles which had escaped recognition, that they should not be more common in cases in which the eyes were recognized as the source of the symptoms. His experience leads him to think that when eye-strain is the cause of headache, there will usually be evident asthenopia, and that the origin of the trouble in such cases is much more commonly in the refractive than the muscular apparatus. In many instances in which accomodative asthenopia is associated with nervous disturbance, both conditions are due either to debility or to a neurotic constitution.

PROF. HEBRA, of Vienna, a man of a good deal of worldly wisdom, used often to express himself in this wise: "It is necessary that there should be surgical geniuses, but don't ever let a surgical genius operate on you." It is probably well that the attention of the profession should be called to all the sources of possible irritation in nervous disorders, and some of the best writers on this class of diseases recommend an examination of the eye as a matter of routine in all such cases, but perhaps, in the present state of our knowledge, it would be better not to send the patients to an enthusiast on the subject of graduated tenotomies. The correction of refractive errors by means of glasses is likely to do no harm, even if it fails to relieve the nervous symptoms, but it is to be feared that as much cannot be said of operations intended to restore the balance of the ocular muscles.

THE M. O. L. L. U. S. AND ITS MEDICAL FOUNDERS.

The recent celebration of the twenty-fifth anniversary of the organization of the Military Order of the Loyal Legion of the United States directed attention to the almost forgotten fact that two of the three originators of the Order were medical officers, DR. SAMUEL B. WYLIE MITCHELL

and DR. PETER D. KEYSER, both of Philadelphia, of whom the latter alone survives. He was also the only one of the founders present at the meeting, Colonel Zell being in Florida.

On the 15th of April, 1865, Dr. Mitchell and Dr. Keyser met on their way towards the State House in Philadelphia to learn the particulars of the death of PRESIDENT LINCOLN, and went into the office of COL. THOMAS ELLWOOD ZELL, at Sixth and Chestnut streets, with whom they talked over the great national calamity, when the proposition was made to call a meeting of officers and ex-officers then in the city to take appropriate action in the matter. At the same time it was resolved to form an association on the plan of the Order of the Cincinnati, and the whole affair was then and there mapped out, Dr. Mitchell proceeded at once to publish the call in the newspapers, which was promptly responded to, and after several meetings the Order was established, with Col. Zell as President, Dr. Mitchell as Secretary, and Dr. Keyser as Treasurer, the latter afterwards becoming the first Chancellor and Gen. Horatio Sickles Treasurer. Dr. Samuel Brown Wylie Mitchell entered the Army as Major and Surgeon of the 18th Pennsylvania Infantry, April 24, 1861, and was honorably mustered out as Bvt. Lieutenant-Colonel U. S. V., March 13, 1865. Thomas Ellwood Zell became Captain of the 121st Pennsylvania Infantry, September 2, 1862, and was Lietenant-Colonel of the 3d Battalion of Pennsylvania Infantry when mustered out January 29, 1864. Dr. Peter Dick Keyser entered the service as Captain af the 91st Pennsylvania Infantry, September 21, 1861, was honorably discharged for disability August 15, 1862, commissioned Acting Assistant Surgeon U. S. Army, June 18, 1864, and resigned March 9, 1865.

Its Æsculapian parentage has, doubtless, had much to do with making the Loyal Legion attractive to medical officers. The medical corps of both Army and Navy, notably the latter, were largely represented at the anniversary celebration at Philadelphia, many of the companions having traveled long distances for the purpose. Their presence on that occasion was significant evidence of the patriotic and loyal spirit which actuated the members of the medical profession during the late war, as it did during the Revolution, when DR. JOSEPH WARREN, wearing a General's stars, gave up his life for his country at Bunker Hill, and DR. BENJAMIN RUSH, as Surgeon-General of the Continental Army, effectively organized the medical department, without which no army can long preserve its physical prowess or its military efficiency. Medical men are proverbially unassertive, not only as to what concerns their several individual interests, but as well in the neglect to recognize and proclaim the valorous and praiseworthy deeds of the members of their own profession. We fear that not many remember that DR. SAMUEL CRAWFORD was one of the distinguished Major-Generals of the Civil War, or that DR. ALBERT J. MYER, Assistant Surgeon U. S. Army, was the originator of the Signal Service, which has become so important a part of our military establishment.

MEDICAL ASPECTS OF IMMIGRATION.

DR. JOHN B. HAMILTON, of the Marine-Hospital Service, was recently a witness before the Congressional Committee on Immigration, investigating the problems that are constantly arising at New York Harbor. Dr. Hamilton has been temporarily engaged in supervising the sanitary and medical interests of immigrants in consequence of the Treasury Department having assumed the responsibity of the disembarking of thousands of immigrants who have until lately been looked after by the State authorities. There are now 150 immigrants in hospital and not less than thirty of them are insane. Only one of the latter is fit to be returned to the country whence he came without escort. Those who come here insane or who become so within a year after arrival may very properly be sent back; by so doing there would be a diminution of one-third of the inmates in the governmental asylums. There is a large number of immigrants who are afflicted with incurable diseases. There is no regulation as to how long the Government is bound to take care of sick and disabled foreigners, but there should be some limit to the Government's responsibility in such cases. There is no good reason why the limit may not be fixed at the keeping of those persons just so long as shall be necessary to get them in a condition suitable to their return without injury. The restriction of immigration, as regards the criminal and the contract laborer, has been effected considerably in advance of the questions bearing on health and

intelligence, but these latter must be reached in due time. Certain of the contagious diseases are not knowingly permitted to enter, and a form of inspection is believed to exist at specially exposed ports of embarkation. *The Lancet* recently pointed out the superficial character of some of this inspection, and indicated the great gains that would sanitarily flow from a proper performance of this duty, which when once satisfactorily and competently established regarding infectious diseases may be gradually extended to embrace mental and other non-contagious maladies which damage the individual in his relations to a useful citizenship, but do not imperil the public health.

HYDROGEN PEROXIDE IN DIPHTHERIA.

Dr. Elder, of Seaton, Ill., writes to the *New York Medical Journal* concerning a series of cases of diphtheria for which the peroxide of hydrogen was applied as a membrane-solvent. Others have written in our periodicals on this subject, notably Dr. Squibb of Brooklyn, Dr. Love of St. Louis, and Dr. Major of Montreal, but Dr. Elder's results appear to have been so decisive that a description of them will pardon a little repetition. He says: "I armed an applicator with a pledget of absorbent cotton, saturated it with the peroxide, in the full strength of the ordinary "ten volume solution," and rubbed it over the membrane several times. The effect was magical. The membrane did not dissolve, but softened; it took on the appearance of whipped cream, let go its hold on the mucous surfaces, and was then easily removed by the applicator. It left a raw surface, showing that the membrane had been really diphtheritic in character." This treatment, in the opinion of the writer, had not the effect of preventing the re-formation of the membrane, but it left a clear surface for the application of other antiseptics and prevented auto-infection. No sign of blood poisoning appeared in this series of cases. The applications were made once an hour during the four or five days, before the membrane ceased to form. Dr. Elder is not positive in regard to the strength of the solution used by him, since the bottle from which he obtained it had no label showing whether it was full strength or not, but he believes that it was the regular ten-volume solution. Dr. Love, one of the first to publish his use of this agent, commonly diluted this solution with three times its volume of water: he particularizes the deodorant property of the drug in cases giving off an offensive discharge. Dr. Major began with a solution even weaker that of Dr. Love, increasing it to the full strength as the treatment advanced; in his experience the solution removed the membrane by corroding it, so that the extruded fragments present a more or less porous or honeycombed appearance.

EDITORIAL NOTES.

HOME.

To Visit Mammoth Cave.—The Louisville and Nashville Railroad have made such arrangements that those delegates who may desire to visit Mammoth Cave can stop over at Mammoth Cave Junction by notifying the conductor between Louisville and the Junction. The agents of the road at the Mammoth Cave Hotel must endorse their tickets, which will then be available on later trains from the Junction to Nashville. Those who desire to visit the Cave after the meeting of the Association will confer with Secretary Atkinson at Nashville.

The Preparation of Papers.—It is a matter of utmost importance that by previous preparation the papers submitted at the annual meeting should in all respects be so complete as to need no revision after they are read and pass into the hands of the secretaries. It would in most instances be a special service to the publishers if the papers presented were type-written. The saving of time and expense in the matter of proof corrections is one which fails, in most instances, to be appreciated.

If papers are to be illustrated, the cuts should either accompany the papers, or full and explicit memoranda should accompany each paper with reference to them.

It would hardly seem necessary, and yet we are obliged to add, that a paper, when read, should pass *immediately* to the Secretary of its Section, as the property of the Association, and that its publication elsewhere before it appears in The Journal is in direct violation of the rule of the Association, and which is a condition of its acceptance.

Suggestions to the Officers of the Sections.—In The Journal of May 3 the preliminary programmes give evidence of diligent efforts

and of abundant success in the securing of full supplies of papers to be read at Nashville. We find that two hundred and twenty-eight articles are already promised, and still the lists are incomplete. We hardly see how these papers are to be appropriately presented and properly discussed during the brief hours allotted to the sessions. May we venture to suggest to the officers of the Sections that they group the papers that are closely related and let them be read in succession, and that the discussions follow at the close of the readings, thereby saving valuable time and the avoidance of repetitions, which must of necessity follow if the papers are to be discussed separately.

Reports of Discussions.—With the presentation of about two hundred and fifty papers in the various Sections, it is evident that the Original Department of The Journal will be taxed to its utmost to give them a place during the year. In connection with these papers, it often happens that the discussions which they elicit are quite as valuable as the papers themselves, and if it were possible to publish them in full The Journal would be only too glad to employ shorthand reporters. As it is, either The Journal must be doubled in size, or a portion of the regular papers must go unpublished, or the discussions must be limited to such outline reports as those who participated in those discussions are willing to reduce to writing at the time. Stenographic reports would accumulate a mass of material which, no matter how valuable, could only in small part be utilized.

The Meeting of Railway Surgeons.—The annual meeting of the National Association of Railway Surgeons, after a most enjoyable and profitable meeting at Kansas City, adjourned on May 2, to meet at Buffalo, N. Y., May 2, 1891. The following are the officers elected for the ensuing year: President, Dr. Warren B. Sutton, St. Louis; First Vice-President, Dr. S. S. Thorn, Toledo; Corresponding Secretary, Dr. A. G. Gumaer, New York; Recording Secretary, Dr. E. R. Lewis, Kansas City; Treasurer, Dr. R. Harvey Reed, Ohio.

FOREIGN.

Queen Victoria has granted Richard Sarell, Esq., M.D., M.R.C.P., authority to wear the Insignia of the Order of the Osmanieh of the Third Class, which His Imperial Majesty, the Sultan of Turkey, has been pleased to confer upon him, in recognition of his services whilst actually and entirely employed beyond Her Majesty's Dominions, as Professor of Clinical Surgery in the Imperial School of Medicine at Constantinople.

The Nizam of Hyderabad has founded three annual scholarships, each of the value of £300 per annum, to be held in England for four years. Native students of medicine, law, and physical science or engineering will be eligible for the awards. On their return to Hyderabad the services of the recipients are to be placed at the disposal of the Nizam's Government for four years, or until the receipt of permanent employment.

Professor Kocher, the well-known surgeon of Berne, has been elected an honorary member of the Medical Society of London, not, as stated in a paragraph which has gone the round of the German medical press, of the British Medical Association. Professor Kocher is said to be the first Swiss practitioner since the encyclopædic eighteenth century luminary, A. von Haller, on whom the honorary membership of the Medical Society has been conferred.

Grateful Passengers.—In gratitude of their deliverance from the perils of the voyage in the Inman liner *City of Paris*, the passengers, before landing, subscribed £600 as a thank offering, and appointed a committee to decide upon its application. It is understood that the committee have decided to hand over £400 to the Seamen's Hospital, Liverpool, for its general purposes, and to endow with the balance a bed in the same institution for sick American sailors.

Memorial of Prof. von Volkmann.—Steps are being taken to erect a permanent memorial of the late Prof. von Volkmann in the form of a statue or bust, to be placed in the Halle Surgical Clinic. A committee has been formed to further the project, Dr. Ackermann, Prof. von Bergmann, Dr. Hiller, Prof. F. Krause, and Dr. Schrader, being the medical members on the acting committee. Sir James Paget, Sir Joseph Lister, Sir W. MacCormac, and Sir Spencer Wells have joined the movement, and will be happy to forward contributions from their countrymen.

TOPICS OF THE WEEK.

LEPROSY.

Perhaps there is no disease respecting the nature and conditions of which so little is accurately known as leprosy. History tells us that it was widely diffused through many European countries in the Middle Ages, and for several centuries it was an object of terror. People shunned a leper as they shunned pestilence, although pious monks gave themselves up to nursing the victims of the strange malady for the love of God, and lazar-houses were set apart for their reception, and the ordinances of religion were modified to meet their special needs. Then by degrees the disease died out almost everywhere, and now it only exists in a few corners of Europe and in certain definite localities in other parts of the world. One peculiarity is that it seems to have its fixed seats, its chosen haunts, from which it does not wander. Certainly it does not spread like those infectious disorders, which when they break out in one spot may diffuse their malign influence over a whole country or an entire continent. One reason why our knowledge of leprosy is so fragmentary, and in a scientific sense valueless, is that few opportunities are found for skilled observation and research. No case is known to exist in England, unless it be the one which was supposed to be discovered in London a few months ago. Mr. M'Cormick, of St. Matthew's Vicarage, Brighton, has been paying a visit to the leper settlements of Norway, one of the few countries where the disease is still prevalent to any considerable extent, and the facts he has gathered will modify some of the more common impressions. He states with confidence that leprosy is not contagious; he has this from competent judges, who have been much among lepers, and who tell him that they have never been able to trace a case where nurse, doctor, or attendant had been infected. This is a fact, and not a mere opinion, and so the more conclusive, assuming it to be well attested, and of which there seems to be hardly any ground for doubt. There is the further circumstance that the Moravian missionaries have been working among the lepers for seventy years, and that of twenty-one who have spent their lives in ministering to these poor people not one has taken the disease. If this can be relied upon, we need not be under any great anxiety for the young lady who has gone to nurse the lepers in the settlement where Father Damien lived and died. Mr. M'Cormick adds a disquieting remark, which would hardly be called for if his general statements are correct: he says this young lady will be safe "if she uses the most ordinary caution." It would seem to follow that there are circumstances under which the disease may be contracted from contact with one suffering from it. Then there is the case of Father Damien himself. On this point Mr. M'Cormick cites a statement "which has lately appeared in the newspapers," made by Dr. Hyde, of Honolulu, that "Father Damien did not take up his abode at the leper settlement till he became a leper himself." This is rather loose both in origin and expression, and something more precise is desirable. It is reassuring to be told that in Norway the disease is dying out under proper treatment. Isolation is regarded as the remedy. The disease is believed to depend mainly upon hereditary transmission, and if all the existing cases could be rigidly secluded no new ones would arise. In this way the lepers have fallen from 2798 in 1859 to not much over 700 at present. It appears to be upon isolation that reliance was chiefly placed in the Middle Ages, and that may have been the reason of its extinction. If so, there is a concurrence between ancient and modern experience which confirms the belief entertained in Norway that the disease will die out there in the course of the next fifty years.—Editorial *Provincial Med. Journal.*

CLINICAL TEACHING OF OBSTETRICS.

Nothing can better demonstrate the deficiencies of the usual American medical education than the general surprise and approbation expressed at the practical teaching of obstetrics in the Medical Department of Harvard University. At this institution each student is required to personally attend at least four cases of labor and submit a written report of them. One of these he is expected to attend under the instruction of a teacher of obstetrics. There is nothing remarkable in this course except that it is practically unique in this country. The average medical student receives his diploma without any other experience in obstetrics than that gained from his text-book and his teacher, assisted, maybe, by a lay-figure or manikin. Ninety-nine per cent. of medical graduates leave their scholastic halls with no better equipment than this. They know nothing of operative obstetrics beyond abstract general rules, and it is only in the course of time and actual practice that they can become safe accoucheurs.

If there were any insurmountable barrier preventing the better teaching of obstetrics in our schools, this condition of things might be condoned; but there is none. Every city or community in which the existence of a medical college may be pardoned offers facilities that need only be grasped. The arrangement at Harvard may be duplicated by any school not situated at some country cross-road, that has the conscience or the energy to desire it. Every city provides, ready at hand, a more than sufficient amount of clinical material to give the student all the practical knowledge necessary. Recent years have seen a vast improvement in the way of bedside instruction in medicine and in surgery, an improvement that requires the existence and maintenance of a hospital for its accomplishment, but obstetrics has hitherto been sadly neglected, though the opportunities for its proper study lie ready at hand.—*Pittsburgh Med. Review.*

MORVAN'S DISEASE.

Dr. Morvan, who is a physician practicing at Lanilis, in Brittany, described in the *Gazette Hebdomadaire* for 1883 what he called "Analgesic Paralysis, with Whitlows on the Superior Extremities." When his first patient, a man, came before him, before opening the abscess he told him not to flinch, and to his great surprise he found that the man did not move in the slightest, because he had

not felt the knife. Morvan and others have published several other cases in French journals, and Jürgensen has described one in the *Berl. Klin. Woch.*, 1889. Charcot has collected all these references in an article in *Le Progrès Médical*, March 15, 1890. It appears that the chief features of the disease are, first, pain in the fingers, and then paralysis with wasting of the muscles, first of the hand and subsequently of the forearm. The pain passes away, and is succeeded by anæsthesia and analgesia, then indolent abscesses appear scattered about on the hand and forearm. The last stage is necrosis and sloughing of the bones and soft parts, especially of the hand. The temperature of the affected parts is low. The disease begins sometimes in one hand, sometimes in the other, but it always soon becomes symmetrical in the hands and forearms. It is extremely slow in its progress. Some of the patients have remained under observation for twenty years. No means of arresting its progress is known. It has to be distinguished from Raynaud's disease, from that form of scleroderma which affects the hands symmetrically, and from leprosy, but the diagnosis from all these is easy. Morvan's disease, however, much resembles the condition produced by some forms of syringomyelia, and the resemblance is the more close because cavities in the spinal cord are much more frequent in the cervical region than elsewhere. In syringomyelia the muscular atrophy is more marked and more extensive than in Morvan's disease. The disturbances of sensibility are more widely distributed in the former, but all are not equally lost, for the patient may feel pain but cannot distinguish between hot and cold objects; and, lastly, in syringomyelia any trophic disturbance may occur; the presence of abscess is accidental, but it is characteristic of Morvan's disease.—*British Medical Journal.*

WOOD AS A SOURCE OF HUMAN FOOD.

Probably no modern science presents a wider field for speculation than that of chemistry, and more especially, perhaps, that branch of the science which treats of organic compounds. Since the day when Wöhler overthrew for ever the notion that organic substances were exclusively the products of the operation of a so-called vital force by his discovery of the synthesis of urea, a great number of bodies, hitherto obtained only in Nature's laboratory, have been successfully built up, as a result of a careful and most minute study of their exact nature. The discovery of the preparation of substances by artifice, more particularly the dyes, has, as a matter of course, influenced very considerably home and foreign industries. What shall be said, then, when chemistry promises to solve hard problems of political and social economy? In an address delivered at Heidelberg, by no less eminent an authority than Victor Meyer, it is announced "that we may reasonably hope that chemistry will teach us to make the fibre of wood a source of human food." What an enormous stock of food, then, will be found, if this becomes possible, in the wood of our forests or even in grass and straw. The fibre of wood consists essentially of cellulin, $C_6H_{10}O_5$. Can this be made to change into starch? Starch has exactly the same percentage composition, but, as everyone knows, it differs very much in its properties, and the nature of its molecule is probably much more complex. Cellulin is of little or no dietetic value, and it is not altered, like starch, in boiling water. It readily gives glucose when treated with strong sulphuric acid, as is easily shown when cotton-wool, which is practically pure cellulin, is merely immersed in it. Starch gives the same product when boiled with weak acid. The author further quotes the researches of Helreigel, which go to show beyond dispute that certain plants transform atmospheric nitrogen into albumen, and that this process can be improved by suitable treatment. The production, therefore, of starch from cellulin, together with the enforced increase of albumen in plants, would, he adds, in reality signify the abolition of the bread question. It must be borne in mind, however, that theory, fascinating and promising though it may be, is not always capable of being followed by a practical result.

THE ANTISEPTIC POWER OF COFFEE.

Dr. Lüderitz has recently made a number of observations on the destructive power of coffee upon various microbes. He found that the organisms all died in a longer or shorter period—*e. g.*, in one series of experiments anthrax bacilli were destroyed in three hours, anthrax spores in four weeks, cholera bacilli in four hours, and the streptococcus of erysipelas in one day. It was, however, remarkable that good coffee and bad coffee produced precisely similar effects. He believes that, as previous observers have suggested, the antiseptic effect of coffee does not depend on the caffeine it contains, but on the empyreumatic oils developed by roasting.

COLLECTIVE INVESTIGATION.

Some weeks ago a collective investigation of the influenza epidemic was organized in Germany at the suggestion of Prof. Leyden, of Berlin. A table of fifteen questions relating to the etiology, symptomatology, course and sequelæ of the disease was issued to all medical practitioners in the Empire. Answers are said to be pouring in in numbers beyond all expectation, and the committee is now considering how best to deal with the enormous material which has been collected.

MEDICAL EDUCATION IN THE UNITED STATES.

If America has sometimes seemed to be open to the charge of neglecting the more scientific side of medicine and medical education, that reproach is in a fair way to be removed. Hardly a month passes but we hear of fresh foundations of laboratories and chairs. At the present time a large new laboratory is in course of erection as an extension of the accommodation already provided in the Harvard Medical School, Boston, U. S. A., and the University of Pennsylvania, having obtained an endowment fund of $200,000 for the department of hygiene, is about to erect a hygienic laboratory at a cost of $50,000.—*British Medical Journal.*

PRACTICAL NOTES.

ASENITE OF COPPER.

The remedy which I have left for final consideration is probably the best, owing to the wide range of application during certain seasons of the year, the summer and autumn, when you will have frequent opportunities for using it in practice. I refer to arsenite of copper, Scheele's green, which is prepared in the form of tablet triturates without compression, each tablet containing one $\frac{1}{100}$ of a grain. Ordinarily you might suppose that no therapeutic effects would be observed from such a small dosage, but manufacturing chemists tell me that both arsenic and copper, the constituents of this product, can be detected when the proportion is so small as one part to ten thousand.

In the summer season we have frequent calls to attend children and adults suffering from diarrhœa, dysentery, cholera morbus, and like diseases. A history covering several days' illness may be secured; the stools are slimy, watery, and sometimes bloody, and are as frequent as from five to twenty daily. Arsenite of copper may be used with marked benefit in these cases. Dissolve one of the tablets in from four to six ounces of water, and have the patient take one teaspoonful of the solution every ten minutes for an hour, and hourly thereafter. If the patient is a child 6 months old or less, of course but a small portion of this dose can be given, but several drops can be given in the manner and at the times indicated, and the results, it will be found, are quite as satisfactory as when adults are treated. When desired the drug can be prepared in the form of tablets, each containing the exact amount of the medicament for a single dose, and this precludes the need for the use of water, which is sometimes contra-indicated.

Having used this preparation now for nearly two years, and having witnessed the best results from its use, not only in my hands, but in the hands of several hundred other physicians who have reported to me, I feel warranted in speaking to you upon the subject thus strongly, and trust, when you get into practice, that you also will be as successful in its employment.—Aulds, *N. Y. Med. Journ.*

THE DANGER OF IODIDES IN ACUTE NEPHRITIS.

Professor Primavera (*L'Abeille Médicale*) declares that it is dangerous to prescribe the iodide of potassium or sodium in acute nephritis. In support of this opinion, he cites the following, one of many similar cases he has seen:

A boy, 14 years old, developed acute nephritis fifteen days after an attack of scarlatina. The urine was scanty and albuminous, and contained large quantities of hæmoglobin and numerous casts. A milk diet was prescribed, but no drugs. Some days later, after the albumen had greatly diminished, another physician prescribed iodide of sodium, which was immediately followed by an increase of the albumen and casts, and the appearance of blood. The iodide was stopped and the albumen and blood rapidly diminished. On giving the iodide a second time the same symptoms were produced, and again disappeared when the drug was withdrawn.

Primavera is convinced that the iodides are dangerous in acute nephritis. They may be used in syphilitic nephritis, but even here must be carefully watched.—*Medical News.*

BOYCOTTING THE INTERNATIONAL MEDICAL CONGRESS.

While the medical journals of England, America, Germany, Austria, Italy, Scandinavia and other countries, are freely and gladly publishing accounts of the coming International Medical Congress at Berlin, the French medical journals are almost completely silent on the subject. We observe very few French names upon the lists of authors of papers, and, altogether, it looks as though the doctors of France intended to "boycott" the International Medical Congress simply because it is to be held in Berlin. Such action would be most unworthy of the members of a liberal and learned profession, and would eventually do the French school serious harm in the eyes of the world.—*Medical Record.*

SULPHO-CALCINE IN DIPHTHERIA.

A case of diphtheria came into my hands recently, which had been resigned as past hope by the former physician. The event fully justified his opinion. This case presented a difficulty, sometimes met with, where the preparation of iron and nascent chlorine, upon which I usually rely, proved too strong for the child's mucous membranes; while it could not destroy the diphtheria when diluted. The day before the child died, her brother, 18 months of age, was seized with the same disease, in a malignant form. Knowing that it would be useless to rely on the chlorine mixture, a trial having shown the same effect as in the older child, I determined to employ sulpho-calcine; Dr. Love having reported favorably upon it. The liquid was applied in full strength to the false membranes, while the mouth, throat and nose (which began to discharge ominously) were washed out hourly with as strong dilutions as they could bear. The child recovered, although slight epistaxis occurred, showing how grave was the nasal affection. This remedy deserves a further trial.—Waugh, *Times and Register.*

SOCIETY PROCEEDINGS.

Gynecological Society of Boston.

205th Regular Meeting, October 10, 1889.

The President, W. Symington Brown, M.D., in the Chair.

PATHOLOGICAL SPECIMEN.

Dr. Henry O. Marcy presented an inflated unilocular cyst of the right broad ligament, which he had removed the previous week, assisted by Dr. A. P. Clarke, of Cambridge. The case was one of exceptional interest in that it had been allowed to develop until the sac and contents weighed 42 pounds. The girth of the patient below the umbilicus was over 50 inches. The operation was at last necessitated on account of dyspnœa and impeded circulation. The cyst had developed from the right broad ligament, not only without pedicle, but had carried up before it a fold of the peritoneum from its attachment in the median line to a point posterior to and on a line with the head of the cæcum. The question of its removal, therefore, was somewhat difficult of solution. A portion of the cyst wall could be brought into the line of the abdominal incision and stitched to the peritoneum, then drained and allowed to close by granulation. This necessitates, at the best, a long and tedious convalescence, rendered doubly objectionable from the weak and exhausted condition of the patient. The wall of the sac along the border of its attachment was covered with extraordinary varicosed veins. This seemed to threaten unusual danger from hæmorrhage. The emptied cyst was put on tension at a considerable distance from its attachment on either side, the peritoneal investment was divided (as shown upon the inflated specimen), and the cyst was enucleated. Divided edges were caught and held by three or four pairs of Spencer Wells' large compression forceps, while Dr. Marcy sewed through its base with a double tendon suture in an even continuous seam, measuring about nine inches in length.

Owing to the extraordinary size of the vessels a second line of sutures was carried parallel to the first through the double fold of the peritoneum, about one-half an inch nearer to the median line. The tissues were resected parallel to this, and the peritoneum was intrafolded by a line of continuous tendon sutures, taken by a modified Lembert stitch. The abdominal wall was closed after Dr. Marcy's usual method, in four layers of tendon sutures, and sealed with iodoform collodion. The patient rallied well from the operation, and has thus far gone on to a rapid convalescence.[1]

[1] The patient was discharged from the hospital at the end of the third week.

Dr. Henry O. Marcy read a paper entitled

CURE OF HÆMORRHOIDS BY EXCISION AND CLOSURE WITH THE BURIED ANIMAL SUTURE.

The medication of wounds, and treatment based upon aseptic measures, marked the present as an era of surgical evolution, to which the surgery of the rectum should be no exception. The writer emphasized the views of Mr. Whitehead in regard to the pathological changes usually found in these troublesome affections. It was probable that the changes incident upon retention of the rectal contents and other causes acted to bring about dilatation of the vessels, rather than the superincumbent weight of the portal column of blood. When the venous plexus of hæmorrhoidal vessels had become pronouncedly varicosed, they had as a covering the lax submucous tissue of the rectum close to the anus, and when put on tension were protruded as a ring of transverse rugæ around the anal aperture. Certain of the rugæ were developed into rounded protuberances, and sometimes even into fungoid tumors of considerable size. The veins sometimes ruptured into the connective tissue, and changes followed which resulted in tumors of various sizes, color and density, called "external piles." The strain in defecation or gentle pressure of the finger from above downward would frequently cause soft, fleshy, exquisitely sensitive, grape-like masses to protrude—"internal piles." The mucous membrane covering these would frequently be found congested and abraded, so that more or less continuous hæmorrhage ensued.

It is only by dissection of the parts in the living subject that the extraordinary dilatation of the hæmorrhoidal plexus of the veins can be fully appreciated, and this is the essential factor to be eliminated in the process of cure. Dr. Marcy reviewed in a judicial and careful manner the different methods in more common use. Although the method for the cure of hæmorrhoids by the use of the ligature had been considered the safest, surest and most manageable procedure, he condemned its use as unsurgical, viewed from the standpoint of modern wound treatment, in that it necessarily produces necrosis of tissue, while its attendant conditions of fermentative decomposition exposes the patient to the same dangers, although, perhaps, in less degree, as infection in any other part of the body. It is also tedious and painful, and deals in a blind and uncertain way with an undemonstrated pathological factor-age. The stoutest advocates of the ligature admitted that abscesses, general septic poisoning and other dangers, as secondary hæmorrhage, were not wanting in the experience of the most careful and practical surgeons. Because of these objections the clamp and cautery came into vogue. It had advantages over the ligature in that the primary wound was aseptic. Dr. Marcy

thought, however, that for the same general reasons that have caused its abandonment in nearly every other wound made by the surgeon, the clamp and cautery should be relegated to history as a relic of barbarism. It might be questioned whether deep burning was safer than deep cutting in any disease. The pain inflicted, the slowness of the healing process, and often the imperfect results, are abundant reasons for desiring a better method.

Few of the modern methods received more speedy attention, or had been more gladly accepted by the profession, than the injection of hæmorrhoids by carbolic acid or other agents, to produce their destruction. The general consensus of surgical opinion, however, is condemnatory, inasmuch as, no matter how carefully injected, the tissues, not infrequently, which it was desirable to remove, failed to be acted upon, while the fluid escapes into the tissue where there is the least resistance, and the connective tissue surrounding and supporting the hæmorrhoidal plexus is often destroyed—tissues very important to preserve; while the deformed veins, the real pathological factors, remain unchanged, leaving the patient in a worse condition than previous to the injection. Dr. Marcy believed each of the above methods surgically defective and unscientific. Mr. Whitehead had clearly shown that his method of dissection was safe, that the hæmorrhage was not excessive, and that a rapid cure resulted. It is certainly scientific in that by a clean dissection the parts desirable to eliminate are removed. To control the hæmorrhage Mr. Whitehead dissects the veins little by little, and as soon as divided, the free margin of the severed membrane above is attached to the free margin of the skin below by a suitable number of sutures.

Dr. Marcy's method is different from that of Mr. Whitehead in that he first encircles with a row of continuous tendon sutures the base of the hæmorrhoidal plexus before division. His method is briefly given as follows: Care must be taken, previous to the operation, to have the large intestines thoroughly emptied, usually by an active cathartic, supplemented by a large injection given a few hours before operation. The patient is etherized, placed in the lithotomy position, the limbs supported by a Clever crutch or some modification of it. The parts are thoroughly cleansed with the sublimate solution, and the sphincter stretched to produce paralysis of the muscle. The rectum is then washed with the sublimate solution, care being taken that none of it is allowed to remain. A considerable pledget of wool, into which iodoform has been freely dusted, is placed in the rectum. Along the line of the junction of the mucous membrane with the skin, either with a sharp knife or scissors, division is made from the central line posteriorly from below upwards on both sides to the median line above. With a little care this division is made without injury to the plexus of vessels. The loose connective tissue fascia is easily separated by the finger or a blunt instrument quite deeply, cutting any connective tissue bands which may appear. The mucous membrane above the plexus is divided transversely in a somewhat similar manner. The deformed hæmorrhoidal flexus is thus separated from its surroundings, except at its base. A needle with eye near the point, threaded with tendon, is carried behind the mass, emerging beneath the mucous membrane, unthreaded, rethreaded with the opposite end of the tendon, and then withdrawn. In this way the entire base is encircled by a line of deep double continuous sutures. The advantages derived from this manner of sewing is that an even continuous compression is secured, from which it is impossible for any tissue to escape. The stitches are not drawn too closely, since they are used to protect against necrosis of the enclosed parts. The plexus of vessels is dissected with scissors from just above the line of sutures. The mucous membrane is now stitched by a continuous tendon suture to the line of division first made through the skin.

Dr. Marcy prefers a running blind stitch taken from side to side from within outwards, which also buries the external line of sutures. In this way it will be observed that no stitches are left in sight, that the divided edges are evenly and accurately approximated, restoring the parts to their normal condition. The operation is conducted with all possible precaution to prevent infection of the parts, irrigation being continued throughout. When coaptation is complete the united edges are carefully dried, dusted with iodoform, and covered in with a layer of iodoform collodion. The bowel may be moved the third or fourth day. Prolonged constipation resulting in hardened fæces is to be avoided. Primary union may be expected with resultant cure. The surgical rule should be enforced which the anatomy of the parts teaches—the careful removal of the whole hæmorrhoidal plexus. By whatever method attempted, it is the failure to do this which gives failure in result. Dr. Marcy summarizes the advantages of the use of the buried tendon sutures over the excision as practiced by Mr. Whitehead, as follows:

First. Constriction of blood-vessels *before* division, which certainly diminishes the loss of blood and ensures against secondary hæmorrhage.

Second. A much more accurate and early adjustment and closure of the parts.

Third. Continuous animal sutures which are buried and incorporated into the tissues have a decided advantage over the interrupted silk suture, which is ever to be considered as foreign, and if not removed must be thrown off by suppuration.

All the important vessels are secured *before* di-

vision by the continuous encircling sutures, which serve a still further purpose of coapting and holding at rest the divided connective tissue. Necrosis of the parts is entirely avoided, and with the care practiced in modern surgery the wound is maintained aseptic.

All operative wounds made in healthy tissues, without exception, should be closed layer by layer with the buried animal sutures, the skin itself not excepted, and when properly done, drainage is no longer required, and the wound can be at once made germ-proof by hermetically sealing with iodoform collodion. To this rule amputations should prove no exception.

Dr. Marcy's experience has been ample to test thoroughly the method as practiced by himself, and he confidently recommends it to the profession on account of its simplicity, safety, and exceptional results.

208th Regular Meeting, January 9, 1890.

THE PRESIDENT, Dr. W. Symington Brown, delivered the Annual Address, on

THE WELFARE OF THE PROFESSION.

He said: At the risk of being tedious, I beg to recall your attention to the truth that the medical body is a profession, not a trade. I do so because it appears to me that there is a growing tendency in some parts of our country to forget this assumption; and, if the change occurs, we may bid goodby to further progress. For the essence of trade is selfishness, and I do not know anything narrower or more degrading than the worship of No. 1. As Bruno said, 300 years ago: "When science is made traffic, wisdom and justice shall quit the earth."

In such a meeting as this it is not necessary to do more than state the argument, as a foundation for the remarks which follow. The medical profession puts the welfare of the patient first; before emolument, before fame, before everything. A physician who looks primarily to what he considers his own interests has descended to the trade level; he has virtually deserted from our ranks. A surgeon who conceals his mode of operating, or a physician who keeps secret a remedy, has sneaked away from our ranks and entered the trader's. This assertion does not interfere with the circumstance that we earn a living by the exercise of our profession. Of course we do; but we do not make that the *first* object—it is only a secondary or tertiary end; the first one being always, without exception, the welfare of our patient. It has also been asserted that ours is the only profession which cuts away the ground from under its own feet by explaining and enforcing the laws of health. This is only partially true. All genuine physicians are sanitary missionaries; they do their best to teach their patrons how to avoid disease; but I do not expect the time will ever come when mankind will be able to get along without surgeons, and it is more than probable that when mankind have reached the millenial stage, physicians will be held in higher esteem and be better remunerated than they are at present. It will not be necessary, therefore, to discuss the propriety of turning our profession into a trade as a means of betterment.

I propose to consider, very briefly, a few proposals intended to promote the welfare of the medical profession, and also to offer my own opinion as to the only feasible way in which it can be permanently improved. In fact, this short address will somewhat resemble the answer to Pope's question, What is an interrogation point? The poet, you will recollect, was small and deformed, so the answer, "A little crooked thing that asks questions," happened to hit the nail on the head.

And in the first place, to start with, I think there can be no reasonable doubt that the medical profession is overcrowded. All the professions are overcrowded; all the trades are; and as for clerks, sewing-women, and day-laborers, their name is Legion, with an ever-increasing number unenlisted. I intend to confine my remarks to the members, present and prospective, of the medical profession; but we cannot entirely ignore the fact that mankind is one family, and that whatever exerts an influence on one portion of it necessarily affects the whole. A recent writer in a medical journal asserts that dull trade always increases the number of medical students, a result which, while it may rejoice the hearts of college professors, is not likely to be hailed by practitioners as a happy prospect.

And the common notion that epidemics and surgical accidents constitute a harvest for the doctor is about as far from the truth as any falsehood can be. *Our pecuniary welfare depends upon the general welfare.* When a large portion of a community is overwhelmed by sickness they do not earn anything; and as the old Scotch proverb says "It is not easy to take the breeks off a Highlandman" for the very good reason that he does not wear any.

One of the most popular plans to prevent overcrowding in the medical profession is to lengthen the time of tutelage. In the majority of American colleges the present period is nominally three years, but really nearer two years. Even Harvard University has not the courage to make the four-year term imperative; and only recommends it. But I think that every candid physician will admit that four years is too short a time in which to qualify a youth for practice. The period of tutelage should extend over six years,—four years for elementary studies and a modicum of practice work, and two devoted entirely to hospital or other experience, before graduating.

Although a mistaken policy prevents college managers from lengthening the time of study, the

inexorable law of competition, which includes the survival of the fittest, is doing it for them. What are the numerous Polytechnic schools, which are springing up with mushroom-like rapidity, but a practical protest against ineffectual tuition, and a demonstration of the necessity for devoting more time to preparation before engaging in the Battle of Life.

To devote more time to the curriculum would be a good thing no doubt. I am in favor of so doing. But the question arises, would that prevent overcrowding? I think not. Lengthening the period of study, other things being equal, would have the effect of turning out a better class of practitioners, men more skilful than before; and, consequently, would sharpen competition to that extent. At present a large portion of the field lies fallow, and a great disparity of talent exists. A small handful of men reap the great prizes, and the rest, even when successful, get only a moderate living. But when a larger number of well-qualified practitioners enter the field there will be fewer big prizes, and much harder rivalry between the rank and file.

It is scarcely necessary, however, to discuss this part of the subject theoretically; because we have an object-lesson before us in Europe, especially in Prussia. In these countries, the time devoted to study and clinical tuition is much longer than with us, and yet the profession in Germany is not only overcrowded, but very poorly paid. The best English colleges also require students to study longer than we do; yet the average fee charged by general practitioners for a visit in England or Scotland does not exceed fifty cents, and many only charge twenty-four cents a visit. There, too, as here, cities are overrun with dispensaries, where advice is free to all comers, and medicine is furnished at nominal rates, or gratuitously, to thousands of patients abundantly able to pay current charges.

Partial attempts (most of them unsuccessful) have been made to introduce into the United States the system of medical clubs so common in Great Britain. Probably some members present are not familiar with this plan; so I will try to explain its workings. Medical clubs are of different grades; but the great majority of them are made up of working men. The fee for membership is generally low—many of them less than one dollar a year—for which sum the doctor employed by the club agrees to furnish medical attendance during the year, and in some cases certain inexpensive medicines. Then there are family clubs, in which for a marvellously small sum, the physician contracts to attend the whole family, including obstetrical cases.

Some of you may have noticed that the sale of a medical practice is a thing of frequent occurrence in England. If you look over the *British Medical Journal*, or *The Lancet*, you will find whole columns filled with advertisements announcing the sale of medical positions; and a new business has arisen (unknown in this country), that of agents who deal exclusively in these sales. Now the main reason why such sales are so frequent in Britain is the circumstance that the sale generally includes the medical clubs referred to, poor-law positions, surgeonships to collieries, etc., so that the buyers are sure of a certain income for the money invested. It is true that in England a man must first possess a license before he can legally practice medicine, while in Massachusetts anybody may dub himself a doctor by simply hanging out a painted shingle. All the length we have got in excluding quacks is that a quack must possess some sort of a diploma (bogus or genuine) and must have fleeced the public for three years in the same township, before he is allowed to sign a certificate of insanity.

In England, the majority of physicians in good practice employ one or two assistants—technically called *locum tenens*—and in this way manage to attend cheap patients by proxy in simple cases. I have sometimes wondered that this practice has not been adopted here, which shows that Yankee doctors at least are not so expert at money-making as Europe gives them credit of.

I leave to you the discussion of the question whether, if we adopted the system, medical clubs would relieve overcrowding. I do not think that they would.

The next plan for our welfare is of a more ambitious character. It is that of forming medical parishes—similar to those of religious denominations,—in which the doctor will take care of the body, as the clergyman at present takes care of the soul. Under this arrangement the medical incumbent would of course receive a salary, with possible perquisites from outsiders; and he would remain in his parish as long as he and his parishioners were satisfied with each other. His duties would include prevention as well as cure. He would be an authority in matters of hygiene, relating to diet, dress, shelter, and secular education. When the art of ventilation has been invented, and microbes have been mastered, he would probably be expected to lay down rules about fresh air, night air, contagion, vaccination and other scientific trifles. And above all, like his co-laborer the clergyman, he would be expected to set a good example himself in all these matters, and not freeze his stomach with ice cream after eating a hearty meal, or poison himself with nicotine at all times, convenient and inconvenient.

A writer in one of our medical journals has recently proposed that we adopt this parish plan, as a remedy for overcrowding. As far back as 1861, I wrote and delivered a lecture on the same subject, which somehow escaped cremation before I left for my post in the army. I fear that its arguments would now prove stale, flat, and

unprofitable. At all events, I have no doubt that whatever the inherent merits of the plan may be, it would not prevent overcrowding.

I think it must be apparent to every careful observer (and physicians ought to be good observers), that, whatever plan effects a cure, it must be applicable to all classes—professional men, merchants, artizans, and laborers. One symptom is present in all the cases namely, want of employment; the remedy, therefore, whatever it is, must open up opportunities for employment which are at present closed. About a million and a half of able bodied men and women in the United States are unable to secure remunerative employment. I do not include the lazy or criminal classes; that is another and a very different problem. But it is an undeniable fact that an immense body of willing workers, decent, honest people, with dependent children, cannot find work to do, and, of course, cannot pay for medical attendance when they are sick. It is this class alone which furnish the *raison d' etre* of Dispensaries and Charity Hospitals. Nobody proposes to establish hospitals for lazy bummers or professional criminals. Lowering the cost of medical treatment by means of clubs does not meet the difficulty. The lowest class of workers, who, at the best, only earn enough to pay for food, clothing and shelter, cannot afford to pay medical fees at all; and, when out of work, they have to be supported by the town.

This is neither the time nor the place to discuss the minute details of political economy. I do not intend to do so. All I want to do is to emphasize the truth, that overcrowding in our profession—followed by fierce competition and meagre fees—can only be cured by some system which will permanently raise the condition of the lowest laboring class by opening up avenues of employment which are at present closed by legal restrictions. Suppose, for example, that the average wages for unskilled labor were raised from $5 a week to $8 or $10, is it not evident that a large class of patients would be able to pay for medical attendance who at present get it for nothing? I admit that some of the persons thus benefited would probably squander the extra wages on rum or Attleboro jewelry; but human nature is pretty much alike in all classes, and the love of life is not confined to fashionable society.

Every physician performs a large amount of gratuitous work because he knows that the patients cannot pay him. When he is satisfied that they can, this amount of unpaid work is going to be materially lessened; for nobody likes to be humbugged, not even doctors.

In closing, allow me a word or two concerning the welfare of our own Society. I think that it will be absolutely necessary to take steps to increase the number of members. We need an infusion of new blood. As a physician's practice increases, he is apt to curtail his attendance at medical meetings. I believe that in doing so he or she makes a big mistake. Many more practitioners shorten their lives and lessen their usefulness by overwork and worry than by taking things easy. Even if we place the advantages of attendance on the lowest round of the ladder, I am sure that it pays to come here once a month. It is at least a mode of relaxation; and it must be a very poor meeting indeed where one does not learn something, or have his memory refreshed about forgotten verities. And then the close contact of mind with mind sometimes strikes out sparks of light at unexpected moments. I am sincerely sorry that death has robbed us of two of our most pugnacious members; for although we prefer brotherly love as a regular diet, there is no harm in an occasional mental set-to as a means of starting our sluggish circulation. I was sorry to see so small a gathering at the Memorial meeting for Dr. Warner; although the presence of Dr. I. Bowditch, who is a host in himself, helped to make up for the deficiency.

I would also respectfully suggest that each working member (by which phrase I mean those who attend) might make it his business to secure one or two new members. If the profession were only aware how much valuable matter—pathological specimens, instruments, and papers—is brought before us every month, more outsiders would esteem it an honor to be elected Active Members of the first Gynæcological Society that was ever founded in the world.

NECROLOGY.

Dr. Henry H. Smith.

Dr. Henry H. Smith, one of the most eminent and widely known members of the medical profession of Philadelphia, Pa., died April 11, 1890, at his residence 1800 Spruce street, after an illness of ten days that ended in pneumonia. He was in the seventy-fifth year of his age. He has been an active member of the American Medical Association for many years, and will be remembered by many in this and other countries as the courteous and efficient Chairman of the Executive Committee Ninth International Medical Congress of Washington, 1887. We copy the following sketch of his career from the *Evening Telegraph*, April 11, 1890. [N. S. D.]

Dr. Henry Hollingshead Smith was born in this city December 10, 1815. His father James S. Smith was a distinguished lawyer. Dr. Smith was educated in Wylie & Engle's well-known classical academy. He graduated at the College Department of the University of Pennsylvania in 1834, and studied medicine with Professor William E. Horner, and graduated in medicine at the University in 1837. He was then Resident Surgeon of the Pennsylvania Hospital for two years under Drs. Thomas, Harris, Randolph, and Norris, and visited the London, Paris, and Vienna Hospitals in 1839. He spent eighteen months in study at various European institutions, and on his return, in 1841, he settled in practice and commenced instructing private classes in surgery, and delivering lectures on bandaging and other surgical topics.

He became a surgeon to St. Joseph's Hospital in 1849, surgeon to the Episcopal Hospital soon afterwards, one of the surgical staff to Blockley Hospital in 1854, and was Professor of Surgery in the Medical Department of the University of Pennsylvania from 1855 to 1871, when he became Professor Emeritus. At the beginning of the civil war he was appointed to organize the Hospital Department of Pennsylvania, and at the same time made Surgeon-General to Pennsylvania. In this capacity he contributed much to the efficiency of the medical service of the Pennsylvania Reserves and other State regiments. At the first battle of Winchester, Va., he originated the plan of removing the wounded from the battle-field to large hospitals in Reading, Philadelphia, Harrisburg, and other large cities, and established the custom of embalming the dead on the battle ground. He organized and directed a corps of surgeons with steamers as floating hospitals at the siege of Yorktown, and served the wounded after the battles of Williamsburg, West Point, Fair Oaks, Cold Harbor and Antietam. After thoroughly organizing the department of which he was in charge, he resigned his commission in 1862, and has since been actively engaged in the practice of his profession. He won the warmest thanks of uncounted relatives by inaugurating the system of embalming the dead on the battle-ground. No act in the medical and hospital department of the army won more praise than was at that time and has since been awarded him.

He resigned his Professorship of Surgery in the University in March, 1871, after thirty years' labor as a teacher, and was elected Professor Emeritus in that institution. As a lecturer he is described as "excellent and unexceptionable in his style of speaking—quiet, fluent, self-possessed, systematic, and thorough. As a surgeon he is regarded as conservative and very considerate of final results, and therefore successful." In all his various positions he was constantly performing the most important and often capital operations; while a large private practice enabled many to profit by the fruits of a singularly extended and well-grounded experience. Since his retirement from the University he had been attending to his private practice. He was for three terms President of the County Medical Society, and at the International Medical Congress of 1887 he was Chairman of the Executive Committee.

Dr. Smith was widely known as a medical author. His publications include "An Anatomical Atlas," to illustrate William E. Horner's "Special Anatomy" (Philadelphia, 1843), "Minor Surgery" (1846), "System of Operative Surgery, with a Biographical Index to the Writings and Operations of American Surgeons for 234 Years" (2 Vols., 1852), "The Treatment of Disunited Fractures by Means of Artificial Limbs" (1855), "Professional Visit to London and Paris" (1855), "Practice of Surgery" (2 Vols., 1857-63), and numerous surgical articles in medical journals. And he has translated from the French "Civiale's Treatise on the Medical and Prophylactic Treatment of Stone and Gravel" (Philadelphia, 1841), and edited the "United States Dissector" (1844), and "Spencer Thompson's Domestic Medicine and Surgery" (1853). In October, 1843, he married Mary Edmunds, oldest daughter of Professor William E. Horner. A widow and three children survive him.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section on Practice of Medicine.

The paper upon "Systematic Therapeutics," to be read before the Section on Practice of Medicine at the annual meeting at Nashville, aside from its intrinsic interest, will be a novel innovation in the way of presentation. It will be automatically delivered by a phonograph, the cylinders being sent from Boston. The feasibility of so doing has been practically demonstrated, a speech having been recently delivered to the machine and reproduced before an audience of 6,300 so that it was perfectly audible in all parts of the house. A resonator like an immense horn is used for this purpose, the only noticeable difference in elocution being a slight nasal twang such as would come from speaking through a horn. Dr. Warren is thus enabled to sit in his office thousands of miles away from his confrères, and yet to speak to them through this wonderful machine as if he were present in person, even the tones of his voice being maintained.

Dr. Warren will also take the opportunity to demonstrate some of the many practical values of the phonograph to the medical profession.

Programme of Committee on Dietetics.

1. Surgical Alimentation, by W. C. Wile.
2. Milk, by I. N. Love.
3. Feeding in Wasting Diseases, three sections, by Ephraim Cutter and J. A. Cutter.
4. Does Alcohol Conserve Tissue? by E. Chenery.
5. The Chemistry of Cooking, by Traill Green.
6. Feeding the Young, by O. S. Phelps.
7. Diet in Consumption, by Herbert Judd.
8. Mastication as a Factor in the Development of the White Race in America, by E. A. Wood.

The Committee's report will be presented on the third day of the session.

E. A. Wood, Chairman.

The above was received too late for insertion in last week's issue.—Ed.

BOOK REVIEWS.

A Guide to the Diseases of Children. By Jas. Frederic Goodheart, M.D., F.R.C.P., Physician to Guy's Hospital and Lecturer on Pathology in its Medical School; Physician to the Evelina Hospital for Sick Children. Rearranged, Revised and Edited by Louis Starr, M.D., Clinical Professor of Diseases of Children in the Hospital of the Univ. of Pa., etc. Second American from the third English Edition with numerous formulas and illustrations. Pp. 772. Philadelphia: P. Blakiston, Son & Co. 1889.

One of the most striking features of this excellent work is the lucid and agreeable style in which it is written. It is not always easy to explain why one book is tedious and another thoroughly pleasant to read; in this instance the

charm seems to be the author's simplicity of expression. A deserved compliment is paid the American reviser by the author who has been glad to avail himself of various useful hints found in the first American edition.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Vol. 4, No. 2. November, 1889. Pp. 597. New York: Wm. Wood & Co.

The volume contains 1st, a brief paper on the subject of "The Surgery of the Knee-Joint," by C. B. Keetley, F.R.C.S.; 2d, a valuable contribution entitled "Aids to Ophthalmic Medicine and Surgery," by Jonathan Hutchinson, Jr., F.R.C.S.—this work occupied nearly 100 pages, and is well illustrated; 3d, a work on the subject of "Bacteriological Technology for Physicians," by C. J. Salomonsen, translated by William Trelease, from the 2d revised Danish edition. This last number occupies 160 pages; is a very valuable guide to the study of bacteriology, and is particularly designed for the use of those who are obliged to take up this study at home without the assistance of a teacher; it is well illustrated.

THE URINE, THE COMMON POISONS, AND THE MILK. MEMORANDA, CLINICAL AND MICROSCOPICAL, FOR LABORATORY USE. By J. W. HOLLAND, M.D., Prof. of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Illustrated. Third edition, revised and much enlarged. Philadelphia: P. Blakiston, Son & Co. 1889. Pp. vi, 84; price, $1.00.

This is an admirable presentation of the subjects indicated in the title, and is deserving of the highest commendation. The principal feature of the work is the accuracy of description which accompanies each test. It is a common fault of works on chemistry that the directions are loosely stated, so that the inexperienced encounter many difficulties in making tests, and are thereby led into various fallacies. Although arranged specially for use by students in the laboratory, it will be found a most excellent work for practitioners, both because of its precision and its conciseness. It is very well illustrated, and has cuts of most of the apparatus required for analytical work.

THE STUDENT'S SURGERY, A MULTUM IN PARVO. By FREDERICK JAMES GAUT, F.R.C.S., Senior Surgeon to the Royal Free Hospital. Philadelphia: Lea Bros. & Co. Chicago: A. C. McClurg & Co. Pp. xxx, 817; price, $3.75.

As its title indicates, this is a work designed for students, and is intended as an aid in the final examinations. To be useful in this direction, such a work requires to be ample in scope and concise in detail, and the author has certainly been most successful in carrying out these ideas. Illustrations are numerous and well executed, and the arrangement of subjects is well adapted for easy reference. The present work is an epitome of the author's "Science and Practice of Surgery."

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 26, 1890, to May 2, 1890.

By direction of the Secretary of War, the ordinary leave of absence granted Capt. Louis A. La Garde, Asst. Surgeon, in order No. 70, current series, Ft. Assiniboine, Mont., is changed to a sick leave; and the extension of said leave on surgeon's certificate of disability granted him in S. O. 43, April 14, 1890, Dept. of Dak., is further extended one month on surgeon's certificate of disability. Par. 5, S. O. 97, A. G. O., April 25, 1890.

Lieut.-Col. James C. McKee, Surgeon, is granted leave of absence for one month and fifteen days, by direction of the Secretary of War. Par. 4, S. O. 98, A. G. O., April 26, 1890.

By direction of the President, Capt. John de B. W. Gardiner, Asst. Surgeon, will report in person to Brigadier General Wesley Merritt, President of the Retiring Board at Ft. Leavenworth, Kan., for examination by the Board. Par. 4, S. O. 99, A. G. O., April 28, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 3, 1890.

Medical Inspector T. Woolverton, detached from Navy Yard, Washington, D. C., and wait orders.

Medical Inspector G. S. Beardsley, ordered to the Navy Yard, Washington, D. C.

Surgeon H. P. Harvey, detached from the "Ranger," proceed home and wait orders.

P. A. Surgeon A. C. Heffenger, ordered to the "Ranger."

Surgeon J. H. Gaines, detached from hospital, Hot Springs, Ark., and granted sick leave.

Asst. Surgeon L. W. Spratling, ordered to hospital at Hot Springs, Ark.

Asst. Surgeon E. S. Bogert, Jr., ordered to the "Vermont."

Asst. Surgeon F. W. Olcott, ordered for examination preliminary to promotion.

P. A. Surgeon E. W. Auzal, detached from the "Yantic," and resume duty on board the "Galena."

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending April 19, 1890.

Surgeon C. S. D. Fessenden, to proceed to Marion, Ky., on special duty. April 16, 1890.

Surgeon P. H. Bailhache, detailed as chairman of Board for physical examination of officers of Revenue Marine Service. April 12, 1890. To proceed to Portland, Ore., Tacoma, Seattle, and Port Townsend, Wash., as inspector. April 16, 1890.

Surgeon W. H. H. Hutton, detailed as chairman of Board for physical examination of officers of Revenue Marine Service. April 10, 1890.

Surgeon W. H. Long, to proceed to Marion, Ky., on special duty, relieving Surgeon Fessenden. April 18, 1890.

P. A. Surgeon P. C. Kalloch, detailed as recorder of Board for the physical examination of officers of Revenue Marine Service. April 12, 1890.

Asst. Surgeon G. M. Magruder, detailed as recorder of Board for physical examination of officers of Revenue Marine Service. April 10, 1890.

Asst. Surgeon G. M. Guitéras, to report to the Superintendent of Immigration, New York, for special duty. April 12, 1890.

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ORIGINAL ARTICLES.

ELECTROLYSIS IN THE TREATMENT OF STRICTURE OF THE RECTUM.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ROBERT NEWMAN, M.D.,

OF NEW YORK.

CONSULTING SURGEON HACKENSACK HOSPITAL; LATE SURGEON NORTHWESTERN DISPENSARY.

In 1882, I published a few cases of stricture of the rectum treated by electrolysis; some had complications.[1] Previous treatment by other means in some of these cases, one even by proctotomy, had given no lasting benefit to the patients. Electrolysis finally cured the stricture; and in one case the permanent cure was demonstrated by the post-mortem specimen, presented to the New York Pathological Society—the patient meanwhile having died from some other disease.

This latter case was treated in 1871, and I believe was the first application of electrolysis in the treatment of rectal stricture. Recently some successful operations have been reported here as well as in London, and that induces me to give a detailed statement of my unpublished cases, in connection with the old report, including what other operators have done.

History of the Operation.[2]—In 1871 the author first used electrolysis in stricture of the rectum. In 1872 Dr. Beard applied only external galvanism, and in the same case he and Dr. A. B. Crosby electrolyzed scirrhus of the rectum with strong currents through needles inserted in the tumor.[3]

In 1873, Dr. Groh of Olmütz used electrolysis in cancer of the rectum, also with needles. The patient was temporarily improved, the fetid odor and pain disappeared after the first application.[4]

In 1875, Dr. Lente applied galvanism, but as he does not state in what manner, it probably was external galvanism; later the patient was operated upon with the knife.[5] It will be seen that no other operator antedates the cases of 1871, but later different operations with needles, strong currents, and for complication of cancer were done—therefore I believe I am justified in claiming priority in the treatment of rectal stricture by electrolysis.

The plan of treatment followed out in my cases is almost identical with my method of treating urethral strictures by electrolysis. The success achieved in the latter was my inducement to apply the method practically in stricture of the rectum, which was based on the same theory, namely:

Electrolysis is the process of decomposing a compound body by electricity, producing a galvanic chemical absorption of the stricture. This theory is not new and was established eighty-nine years ago by Nicholson, confirmed later by Faraday, and can be found in all text-books on elementary physics and chemistry. Among the recent literature on this subject I am pleased to mention a valuable article of Dr. George H. Rohé, of Baltimore, "The Electrolytic Decomposition of Organic Tissues,"[6] in which the author defines the theory of electrolysis, and explains the action in a very clear and admirable way, introducing all the new nomenclature as adopted by the International Electric Congress in Paris. These theories have been widely accepted, and at the present time our gynecologists, with very few exceptions, practice the absorption of indurated tissues with almost uniform success. Under such circumstances, it is astonishing that some surgeons who call themselves eminent, still persist in an unwarrantable denial of the power of electrolysis, against all theory and practice, as shown by reliable statistical reports, supported by documentary evidence and witnesses.

Instruments.—The treatment applied is virtually the same as in strictures of the urethra. The armamentarium consists of a good galvanic battery with conducting cords, handles, with sponge electrodes, a few binding screws, a set of rectal electrodes of different size and shape, and a milliampère meter to measure the electric current. The electrodes have at one end a metal bulb, copper or brass, silver-plated or nickled is best. The form is flat or round, the latter more egg-shaped; they are made in sets of different sizes; the length is from ¼ inch to 1¼ inch, and the circumference from 1⅛ to 3 inches.

The stem of the electrode, except at the ex-

[1] See New England Medical Monthly, September, 1882.
[2] Ibid.
[3] Arch. Elect. and Neur., N. Y., 1874, i, p. 98.
[4] London Med. Record, March 5, 1873.
[5] Hayes' Jour. of the Amer. Med. Sciences, January, 1875.
[6] New York Medical Journal, December 1, 1888.

tremities, is insulated with hard or soft rubber—some are flexible, others stiff. If larger sizes are needed, I use a metallic bulb, similar in shape and size to a vaginal electrode, which are from 3 to 5 inches in circumference.

Modus Operandi.—The patient may be placed in the Sims position on the left side, but in the majority of cases the lithotomy position on the back is preferable, because in the examination and operation the anatomical relations of rectum and colon with the sigmoid flexure can be better appreciated. The galvanic battery is brought into action with the switch at zero. The sponge electrode, wet with warm water and connected with the positive pole of the battery, is placed firmly in the palm of the patient's hand, but in some cases may be pressed on the abdomen. The negative metal electrode is lubricated with glycerine and inserted *per anum* to the seat of the stricture, and only then the electric current is slowly increased from zero, cell by cell, till the desired strength is reached, which is ascertained mostly by the sensation of the patient. The strength of the current allowable varies from 5 to 15 or even 20 milliampères, according to the seat of stricture, the nature of the neoplasm, the size of the electrode and the susceptibility of the patient; the rule always being not to use a strong current, if a weak one will accomplish the object. The séance may last from five to fifteen minutes. No force should be used, the electrode should be kept steadily against the stricture, and only guided; the electrolysis does the work of enlarging the calibre, and then the instrument passes the obstruction. At the end of the séance, the current is reduced slowly cell by cell to zero; and not until then is the electrode to be removed.

It will be perceived that the occasionally stronger current in this operation is the only difference from the treatment of urethral strictures. Séances may be repeated in one or two weeks. According to circumstances and complications of the disease some modifications of the treatment may be called for, one of which is the use of needles in the mass of the stricture, instead of the metal bulb, at the negative pole. My smaller electrodes are very flexible and long, the object being that undue force is impossible while being used. The instrument also will accommodate itself to the flexure and easily enter the colon; thereby increasing the field of observation.

Case 1.—Stricture of Rectum—Rectal Fistulæ—Failure by Gradual Dilatation—Success by Electrolysis.—March, 1871. Mary V., æt. 24 years, of a robust constitution and healthy appearance; had her first catamenia when 14 years old. Was regular until she became *enciente*, had a child five and a half years ago, when 18 years old. She believes she had a miscarriage, at eight or ten weeks, some time afterwards; then menstruated regularly until one and a half years ago. Without any appreciable cause had amenorrhœa eight months, then menstruated regularly twice, and again a second term of eight months the catamenia were absent. For this amenorrhœa she had no treatment. She complains now of constipation and pain in defecation, has a burning sensation in rectum, headaches and dyspeptic symptoms. The patient was reckless, addicted to intoxicating liquors, and led a very irregular life.

On examination a stricture in rectum is found 2½ inches above the anus. The point of the index finger cannot pass, but enters the stricture, is there arrested, and encounters a very hard, fibrous mass.

The tissues around are indurated, almost simulating the first stage of scirrhus. Dr. Erskine Mason examined the patient with me, and concurred in the diagnosis.

There is no doubt about the diagnosis; the only question is the cause of this trouble. The patient is candid about her history and previous life, hides nothing, and has no object to do otherwise. She positively denies having had syphilis, or any secondary manifestations; never had sexual connection in rectum. For the last six years or longer, I have seen this patient at various times, and any syphylitic appearances would not have escaped my notice. But I am positive that I treated her two years ago for chancroids and condylomata. I recollect that she was careless in attending to the dressing and cleanliness. And this is probably the cause of her stricture. Besides, I do not believe much in syphilitic strictures, except when inoculated by actual contact, and am supported in this opinion by such eminent authorities as Holmes, Coot, Lancereaux, and particularly Mr. Gosselin, who first pointed out the true pathology in "Des Rétrécíssements Syphilitiques du Rectum," *Arch. Gén. de Méd.*, 5th Serie, p. 667.

The shortest and best description of this cause of such a stricture is given by Bumstead in his valuable work,[7] which I cannot resist the desire to quote here: "Chancroids situated near the margin of the anus may give rise to a form of stricture of the rectum, which has improperly been called syphilitic."

Treatment was commenced by gradual dilatation with rectal bougies. Not the slightest improvement was made with this procedure. The patient complained that the bougies gave too much pain, and hurt her so much that after the third time of their introduction, she refused the further continuance of this kind of treatment. She disappeared from my observation for some time, and after an elapse of six months, came back again in a deplorable condition.

October 1, 1871. Her health was now much impaired, and she suffered a great deal. The stricture would not admit of her having a regular

[7] Bumstead on Venereal Diseases, p. 363.

passage from the bowels, which were always constipated, and admitted only once in a while a watery evacuation. She had pain in the gastric region, the abdomen was swollen, the intestines full of gas, and there were constant tenesmus and troublesome eructations. As soon as she had partaken of a meal, vomiting followed. She had excruciating pain in rectum and anus—in fact, almost everywhere, and was much reduced in flesh and very anæmic, presenting a picture of distress and agony.

On examination, I found the rectal stricture worse and smaller than before. By forcibly pushing the finger, its point entered the stricture a little, and there was arrested. Five rectal fistulæ, with small openings in the gluteal muscles, wound their way in tortuous sinuses, burrowing through different tissues. Purulent and bloody discharges from these sinuses dribbled down her limbs, and sometimes, before breaking externally, became sacculated and increased the pain. The patient felt so miserable that she accepted any proposition of operative procedure.

October 3. Bowels were emptied by a purgative and injection. In the evening a dose of Magendie's solution was given.

October 4. The operation (by electrolysis) took place at my office. The patient was very weak, could scarcely walk, and came to my office in a street-car, assisted by a lady friend. She suffered much pain, and could not permit any manipulation, therefore ether was given her. First, the sphincter ani was stretched, then a leaden ball on the end of an electrode was introduced to the seat of the stricture. Above the leaden ball the metal was insulated by a flexible rubber covering. The end of the wire was attached to the negative pole of a Stoehrer 16-cell battery. The circuit was completed by a sponge electrode as the positive pole, attached firmly on the gluteal muscles. All 16 cells were brought in operation for twelve minutes, after which the stricture was considerably dilated, and some of the fibrous mass absorbed. It was not expected that one séance should cure the stricture, and the intention was to repeat the electrolysis in about five or six weeks. However, the sequel will show that no opportunity was given for a second application, and nevertheless the stricture was cured. This proves that an absorption goes on for some time after the real active electrolysis has ceased. A dose of Magendie's solution was given subcutaneously, and the patient went home in a car.

October 5. She feels nauseated from the ether and has some pain. I order suppositories of belladonna.

October 7. Patient feels more cheerful and has no pain.

October 10. Walks about the house, feels pretty well, and has no pain, On digital examination the stricture has almost disappeared, and the rectum feels more normal than before. Nothing was done for the cure of the fistulæ.

From this time the patient felt so well that she refused any further treatment, and even an examination. I have seen her off and on. Sometimes she felt worse, but at other times enjoyed excellent health. The stricture did not trouble her any more, and even her bowels were pretty regular and normal. Then she disappeared from my observation altogether, and only by chance during the following year I came to her death-bed.

April 9, 1872. As I was passing a house on —— street, a lady called to me from a window and, telling me that my former patient was very ill in bed, asked me to come in. Since I last saw her she had become very dissipated, had recently been on a spree, been exposed to cold, and was at that time very weak and in bed with a high fever. I found her suffering from acute peritonitis; constant vomiting of greenish matter, watery discharges from the bowels; abdomen swollen and very tender to the touch; pain, restlessness, high pulse, fever, thirst and great anxiety were the symptoms. It was evident that she could not recover, and the next morning (April 10, 1872), she died.

Autopsy was made on the same day. Rigor mortis very marked. The whole abdominal cavity was filled with thick serum and lymph of a yellow color. All the viscera in the abdominal cavity were covered with a thin layer of freshly effused lymph—parietal peritoneum free. The disease was of so recent a date that no adhesions had formed. The posterior wall of the rectum was firmly adherent to the sacrum. There were condylomata in vagina and around anus and mucous patches in lower end of rectum. The rectum and intestines were free from hardened or accumulated fæces; no scybalæ were found.

Dr. Terry kindly assisted me at the post-mortem, and immediately after made a microscopical examination of the rectum. He reports that the microscope shows no heterologous tissue, and nothing strictly neoplastic.

The specimen was presented to the Pathological Society on the same evening, and showed that the stricture had not troubled the patient, that it had not grown worse since the operation, but, on the contrary, had improved.

The report of this case is complete, and shows the perfect success of electrolysis. It was a very bad case, the patient's loose habits and neglect counteracting all benefits of treatment. No fair play was given to the method, as after the first operation, any further necessary treatment was not permitted. The case was complicated by fistulæ. The patient died nearly seven months after the operation from acute peritonitis after a debauch, and not from the disease under consideration. The specimen showed under all these adverse circumstances a decided improvement, which

cannot be called anything but a decided success.

Case 2.—Mrs. D., æt. 62 years, May, 1875, complains of a twisting and pain in rectum. Has headaches and habitual constipation.

Digital examination. After the finger has passed the sphincter ani, it enters a large cavity, which appears to be a cul-de-sac, without any opening, but on further exploration about 4 inches higher up, to the left, a stricture of the rectum is found. This continuation of the rectum is a closure—a sphincter-like constriction, which is so much contracted that the point of the forefinger cannot penetrate it. The cavity is filled with hardened fæces.

May 7 to 12. Four days were spent in the gradual removal of the fæces from the large cavity of the rectum by injections; and afterward by the use of a long flexible rectal tube, through which lubricating injections were pushed by hydraulic pressure.

May 13. Dr. Frank, of Pittsburg, examined the patient with me, and found the stricture just as firm as described above. Electrolysis was used. The positive sponge electrode was held in the palm by the patient. The negative pole was a bougie, on the end of which was a flat metal piece, a little smaller at the end, three-eighths of an inch in width, the middle part of the instrument measuring five-eighths of an inch.

This bougie was introduced into the rectum and pushed against the stricture. Then the galvanism was used for ten minutes, with ten cells of a new Chester battery. The metal of the bougie became engaged in the stricture, and gaining slowly, finally passed through it. After this electrolytic application, the stricture felt softer, the finger could enter it, and this part of the bowel could be pulled down.

May 21. There is a decided improvement. The stricture is softer and wider; the flexible rectal tube passes it, and is gradually forced up the colon till its point is eighteen inches up from the anus. While it is gradually pushed upwards, the lubricating injections are continued to remove the impacted, hardened fæces.

May 23. The fæces appear to be all removed, the bowels move now, although not quite regular.

May 28. Electrolysis was repeated in the same manner as that of last week; the same instrument passed the stricture, then was detached from the battery and left inside, and above the stricture in the rectum.

Then the same operation was repeated with a round bulb five-eighths inch in diameter, which also passed the stricture; next, the first metal was withdrawn and brought alongside of the second. The diameter of both together was now one inch.

This dilated the stricture a great deal, and to a larger size than a large bougie would have done. To-day she had no pain, no anxiety, and was cheerful.

June 4. Electrolysis as before. Negative, a large metal bougie three fourths inch in diameter. As soon as the instrument was withdrawn the stricture felt as if contracted in folds, exactly like the sphincter ani.

June 15. Electrolysis with bougie one inch in diameter; it passed the stricture in its whole length. Nine cells were used for twelve minutes. The application did good, and the patient remarked that it imparted a welcome warmth to the whole alimentary canal, and even to the abdomen, where formerly she always complained of a chilly sensation.

June 25. Galvanic application. The bougie went into rectum easily ten inches up.

No other cause for this stricture could be found than the atony of old age in consequence of constipation, and impacted fæces, which made below a pouch, and by constantly pulling downwards elongated, and lastly paralyzed some fibres. Above this atonic part the contraction acted stronger and stronger, overpowering the parts below; spasmodic action followed, the mucous membrane became divided in folds, which again contracted until a firm stricture, almost a closure, was created.

Case 3.—Mrs. P., æt. 30 years, married, has a stricture of the rectum of five years' standing; was sent to me by Dr. Bosworth, who had given this case a great deal of attention, and had relieved and benefited the patient much. The treatment consisted of a gradual dilatation, forcible dilatation, division of the stricture by the knife, constitutional remedies, all according to the most approved methods of the best authorities and with the same result: the patient was relieved for the time, but soon the stricture contracted again.

The patient's history is syphilis, uterine disease, pelvic cellulitis, in consequence of which the uterus is retroflexed with fixed posterior adhesions, which also have caused a periproctitis, and leave large indurated masses in the areolar tissues in and around rectum, and in recto-vaginal septum. And now, in addition to all these troubles, which have undermined her constitution, comes the stricture for consideration. It is near and above the anus, one and a half inches high, is equally divided around the rectum in a circular manner, involving all parts of the wall alike; is very fibrous, and extends in length about one and a half to two inches. There is considerable hardness and induration, and the tip of the finger cannot pass through the stricture.

May 13, 1876. Mild application of electrolysis by galvanic battery (Chester), ten cells for ten minutes. As negative pole in rectum there was used a vaginal metal electrode two and a quarter inches in circumference, which finally passed the stricture.

May 19. Electrolysis; positive sponge in

hand ; negative pole in rectum was a rectal tube, conical, silver-plated metal.

Fourteen weak cells were used for twenty minutes. The negative pole advanced very gradually, and at last passed through stricture to a point measuring three inches in circumference and three-quarters of an inch in diameter. Most of the hard fibrous mass had disappeared, when digital examination was made. The annular edges of the stricture could still be felt, but it was smaller, soft, dilatable, yielding in great contrast to the former, hard, unyielding, brittle, fibrous tissue. This séance had done a great deal of good, had absorbed much of the fibrous tissue, to overcome which is the most important part in this case.

June 2. The hard, fibrous tissue is still there, and obstructs the action of the peristaltic motion. Electrolysis as on former occasion, twenty cells, weak solution, for fifteen minntes. The largest rectal bougie passed through stricture in its full length.

June 9. Electrolysis, with twenty-five cells for fifteen minutes, may appear a strong current, for an electrolytic action, when I generally advocate mild currents. However, it acted mildly in our case, and as an explanation, the following is offered: The cells of the battery were small, not filled entirely, and the fluid was very weak from long use. Milliampère meters were not in existence at that time, which explains, that the current-strength is not stated. The rectal bougie used has a large surface by which the force of the current was broken and divided over all parts in contact alike, whereas in other bougies used for strictures the power is concentrated at one point, working against and on one unyielding structure of the part. Now we had not a distinct stricture, not a round annular formation of membrane or ring, but indurated isles in portions of rectum.

June 16. Electrolysis ; twenty cells for twenty minutes. The current was not strong and did not hurt ; softening of fibrous mass was very limited.

July 28. The fibrous mass is extending all around and high up in rectum ; by digital touch it feels suspicious. Progress is not as good as desired, but nevertheless the hard mass has softened and diminished. Another method is now used, viz.: By needles as negative pole, as in the absorption of tumors. One platinum needle is guided by the finger, and pushed into a fibrous band or in a mass of hardened tissue. In one instant the needle is pushed deep into the fibrous band forming the stricture, the circuit is closed by the positive sponge in the hand of the patient. The electrolysis works the needle out towards the rectal cavity by slowly dividing the real mass of the stricture. An advance for the better has been made ; patient feels very well ; the whole constitution is improved, but the hard mass is large, and high up in the rectum, which needs many applications, as in scirrhus.

August 18. Patient reports much improved, and is better in every way. The rectum has lost the feeling of fibrous bands and hardened tissue ; the large bougie enters easily its full length and size.

January 27. Patient reports after an absence of five months, during which time she has not had any treatment. Some indurations, the remains of her pelvic cellulitis, are still present, but the real stricture is cured. Her general health is improved, and she enjoys life now. The patient has been heard from for years afterwards ; during which time she has remained well. At the present time, May, 1889, she could not be found.

Case 4. (*No. 2178*).—Mrs. Marg. O., æt. 38 years ; widow, was married seventeen years ago, had six children ; had been suffering with constipation and hæmorrhoids. Was operated upon by Dr. Swinburne, in Albany. At present complains of pain at defecation, never has a normal stool, always has discharge from anus of matter, pus and sometimes blood.

July 28, 1880. On examination found a stricture two and one-half inches from anus, not very hard, excluding by the touch scirrhus, the stricture was not equally round but irregular in formation, the little finger could engage in it, but would not pass through it.

July 31. Electrolysis. A sponge electrode as the positive pole was held against the abdomen ; a firm electrode with a round metal ball two inches in circumference, connected with the negative pole of a galvanic battery, and introduced into the rectum, pressing against the stricture ; a current of ten cells was used for fifteen minutes, which enlarged the stricture to such an extent, that the electrode and index finger together passed the stricture.

August 7. Electrolysis was repeated, the negative electrode, a vaginal bulb, was used, which did good service in absorbing the indurated masses in rectum. After ten minutes the electrode had advanced six inches in rectum.

August 18. Patient is now much improved, stools are better, and at times almost normal. The stricture is wider, and the walls of rectum are less indurated. Ordered a tonic.

August 25. Electrolysis as before, the stricture thereby was enlarged to three inches circumference.

September 15. Is improved. Different sizes of rectal bougies passed all alike, seven inches from the anus up the rectum.

September 21. Electrolysis as before, with a weak current for six minutes, which further enlarged the stricture. Discharge of pus, serum and blood was still present.

September 24. Electrolysis with negative

electrode three and one-fourth inches in circumference. There were indurated masses in rectum, hard all around, and extending above stricture.

October 17. Is much improved, in fact, patient considers herself well, having no pains, and bowels acting normally and regularly. Electrolysis with a negative bulb of four inches circumference, passed well through stricture.

October 28. More improved. Large vaginal bulb, four inches circumference, passed easily up the rectum, the walls of the rectum appear normal, all hardness has disappeared.

November. Patient reports well, and is going back to Albany.

Case 5. (*No. 2545*).—*Four rectal strictures, Recto-vaginal fistula, Syphilis.*—Mrs. M. A. C., æt. 36 years, been married eighteen years, has had four children, the youngest is 4 years of age. She had one miscarriage before first child was born. Menstruation has been regular until last month, when owing to the patient's illness it did not appear.

History.—First symptoms of present trouble was noticed five years ago. Previous to that time, bowels were usually regular. Patient states that at first there was a bearing down pain, with a desire to go to stool without being able to accomplish anything. This gradually increased until it would sometimes be three weeks before she had a natural passage. The trouble was first attributed to hæmorrhoids. About this time patient was examined by Dr. Lockwood, who discovered the stricture, and operated twice by dilatation with rectal bougies.

The patient states that the last operation was painful, therefore she did not return for treatment. The dilatation afforded temporary relief.

During the long interval that followed the history is imperfect. There is evidence that no improvement took place. Patient says that her bowels were very irregular, constipation followed by diarrhœa. Health failed. July, 1882, she again applied to Dr. Lockwood. The patient has been sick in bed for some time, emaciated and too weak to stand up. The stricture is so small, that no bougie will pass, and her passages are imperfect. Dr. Lockwood used dilatation with small rectal bougies, which benefited considerably, so that her fæces assumed again a shape, even if it was only as thin as a small little finger. The rectal bougie would not pass farther on, than near six inches from anus.

August 23, 1882. My friend Dr. Lockwood requested me to see his patient in consultation, with the intention of applying electrolysis. Upon inspection a large rounded tumor was seen situated at the verge, and external to the anus. It was soft, irreducible, but not painful to the touch.

The situation and size interfered with the internal examination, but as it caused no inconvenience to the parts it was allowed to remain. Digital examination of the rectum caused excruciating pain. Two inches from the anus the first stricture was found, which was a firm annular ring, in which the tip of the finger engaged, but could not pass through. From the anus and near the stricture on the anterior wall of the rectum are indurated isles painful on pressure.

Examination with rectal speculum revealed several herds of deep ulcerations, which were very painful. A bloody discharge mixed with pus oozes from the parts. In consequence of the long existence of the stricture, and the induration of the tissues resulting from it, there is a recto-vaginal fistula through which fæcal matter is often carried into the vagina. A small rectal bougie passes through the stricture and its conical end, dilates it to a limited extent, but is arrested in its progress by another stricture at three inches from the anus. There were altogether four strictures as follows:

First stricture at 2 inches from the anus; 2d at 3; 3d at 5¼; 4th from 10 to 11.

A solution of nitrate of silver was applied to the ulcers in rectum with marked benefit in stopping the hæmorrhage, and leaving the ulcers in a healthier condition. The general health of patient is bad, she is emaciated and weak from the constant irritation and pain caused by her disease.

August 28. The ulcerations look better; patient is too sensitive to be examined. The ulcerations were slightly touched with the solution of nitrate of silver. Rectal suppositories were ordered to relieve the pain. A tonic containing cinchona was also ordered.

September 1. Electrolysis was applied with the assistance of Dr. G. W. King. The patient was more comfortable, and her general appearance somewhat improved since last visit.

The parts about the anus were unchanged with the exception that the ulcers looked healthier and did not bleed so freely. Dr. King made a digital examination, and confirmed the diagnosis of a very tough, hard stricture, through which the tip of the finger could not be pushed.

Electrolysis was applied, the negative electrode introduced in the rectum had a metal bulb two and one-eighth inches in circumference; the circuit was closed by a positive pole as a sponge electrode held against the abdominal wall. Six cells of a galvanic battery (Drescher), was used, the current did not cause the slightest pain. Its action upon the stricture was prompt, no force was used, the instrument passed easily through the first stricture. It was left in position about twenty minutes, then gradually withdrawn for the current to come in contact with, allowing the time for the whole extent of indurated tissue.

The nitrate of silver solution was applied to the ulcerations.

September 3. The patient feels better to-day; gave injection of castile soap and warm water with fountain syringe. A large quantity of fæcal matter was passed causing considerable pain. Daily injections of warm water were ordered, at bed time an enema of olive oil to lubricate the parts.

September 6. Patient states that she had some hæmorrhage from the bowel after the injection. The ulcerations are healed, there is no discharge from the anus, the parts are less sensitive. A negative electrode was passed, and mild current, six cells being used. The instrument passed the first stricture and engaged in the second when it was firmly held.

This bougie was changed for one with smaller tip, and the current kept in contact with the stricture for some time, but slow progress was made. The whole operation lasted half an hour, no pain was felt from the current. The electrode passed up to five inches through two strictures, but no instrument would advance any farther.

September 8. A flexible electrode, No. 26, French, egg-shaped, short metallic bulb, as negative pole was introdnced in the rectum, the positive sponge electrode held on the abdominal wall, with a current of seven cells. The electrode passed slowly in rectum up its whole length twelve and one-half inches, and encountered several strictures, particularly from ten to eleven inches. The ulcerations within the sphincter ani and above have healed and look healthy. The lower part of rectnm is improved, but the indurations have not entirely disappeared. Patient looks improved, her countenance is more cheerful, she has not had any pain, the fæcal matter passes now in a more compact form, and of larger size. To-day no blood passed, not even a coloring.

September 12. Patient is remarkably improved in every way. Her face has filled up in flesh, she has better color, looks cheerful. She has had no pain, her bowels are more regular, and fæces have improved in form and compactness. The lower part of rectum from anus to five inches up, appears healthy, no pus nor hæmorrhage, ulcerations have healed, but there are still some indurations left. The first two strictures are enlarged, but besides the No. 26 French no instrument will pass up farther than six inches. Electrolysis was applied again when electrode No. 26 French passed up its whole length twelve and one-half inches.

September 15. Patient is much improved, has been out of bed a whole day and walked about the room. Bowels are in a better condition, in fact, move almost normally. No pain. All instruments are arrested at five inches, but flexible bougie, No. 26, French size, passed again up to twelve and one-half inches. Next two bougies were inserted at once, in the following manner: Flexible No. 26, French, ahead, and a second instrument of the size No. 30, French, behind, so that the larger egg-shaped bulb was behind and in close proximity, almost as a continuity of the smaller bulb, No. 26. Electrolysis was then applied, and after twenty minutes the smaller instrument slipped through the stricture, followed immediately by the larger one. Then the smaller was left *in situ* while the larger No. 30, advanced, and passed up its whole length, thirteen inches through all strictures. The instrument could be felt distinctly through the parietal walls of the abdomen, and traced in its whole length up the descending colon. On withdrawal of No. 30, it was brought alongside of No. 26, and in this united form passed through the strictures. The whole séance lasted thirty minutes, without hurting the patient, or causing any hæmorrhage.

September 26. Rectal bougie, flexible, bulb, one and one-fourth inches in circumference, passed through all strictures thirteen inches up where it was left, while a second instrument two inches in circumference was introduced with electrolysis of eight cells, and also passed all strictnres up to twelve and one-half inches. Patient felt both instruments distinctly in her bowel, and commented on the difference of the sensation, comparing it with the former introduction.

On September 15, the passage of the bougie, No. 26, through the upper stricture was painful like a ball of fire, which burned through the small aperture, and then fell into a large cavity. However, to-day both bulbs slipped through easily without any pain or soreness. Galvanism was given to the lower part of the rectum with a vaginal electrode two and one-fourth inches in circumference and three inches long for ten minutes. There are scarcely any indurations left, the rectum feels almost healthy, no pain; bowels are almost normal, general health is improving constantly.

October 3. Electrolysis in the usual manner, negative bulb in rectum, with a current of seven cells for fifteen minutes.

October 7. Solution of nitrate of silver applied to ulcer in rectum.

October 14. Stricture is still hard to the touch. Electrolysis repeated with metal bulb, particularly to five inches from anus, with a weak current of five cells for twenty minutes. Patient was sensitive to the current, otherwise is constantly improving, is gaining flesh, and walks about the room almost the whole day.

October 18. Electrolysis with two flexible bougies, metal ball at the end, both instruments passed upwards thirteen inches without any difficulty. In returning the instrument downward, the electrolysis did good service, and the absorption could be felt by transmission to the fingers and the ease with which the instruments passed.

Dr. Lockwood was present and prescribed iron and quinine.

November 8. The intermission has done harm, there is more hardness in rectum like a relapse. It seems the intermission since last application of electrolysis has been too long.

November 14. Electrolysis with metal bulb as negative in rectum particularly to stricture at 5 inches, current of 8 cells for 12 minutes. Dr. Lockwood was present, after the séance examined the patient and found marked improvement.

November 18. Electrolysis with large bulb, which passed upwards in colon its whole length, 13 inches. After the current had been applied for 25 minutes, the electrode moved about with the greatest ease. The fistula has taken care of itself and is now healed up entirely. Strictures and indurated walls of rectum have improved remarkably. Bowels move now regularly every day. Ordered bichloride in small doses, as it is certain that she had contracted syphilis from her husband.

November 24. More marked improvement. Bougie passes easily without any difficulty. Digital examination does not hurt, the hardness has almost disappeared. Patient is in good condition. Dr. Lockwood present.

December 19. Patient came to my office much improved. Electrolysis, metallic bulb 3 inches in circumference as negative passed easily through all strictures, 10 cells for 25 minutes.

A prolonged illness held me in bed, and after recovery could not find the patient. I never could get any reliable information about her, and therefore cannot say she was cured; but she certainly was much improved when seen last. Dr. Lockwood coincides with the above, and has no trace of his former patient.

Case 6 (*No. 2567*)—*Three Strictures—Improvement.*—1882. Mrs. S. S., æt, 35 years, married 16 years, had four children, the last four years ago. Twelve years ago was so constipated, that sometimes her bowels moved only once in eight or nine days, there was very troublesome meteorism with pain. Ten years ago was treated by an excellent surgeon for stricture of the rectum by dilatation, with only temporary benefit. Next was operated on with the knife at the German Hospital. The stricture closed up again so that a second operation was performed five years ago at the St. Francis Hospital. For the last five years has taken only medicines, mostly large doses of cathartics, but her constipation remained and she got constantly worse. At present she can scarcely pass anything per rectum; any fæces which are evacuated are thin and flat ribbon like, but as a rule only watery diarrhœal discharges run involuntarily which were mixed with blood and pus. She is in constant pain.

December 13, 1882. Examination: Found a tight stricture by digital examination 1⅜ inches from anus, which would permit the passage of a bougie equal to a No. 17 French urethral sound. No larger instrument could pass the stricture. Two more strictures above the first were found, so that we have three strictures as follows: 1st. Stricture at 1⅜ inches from anus; 2nd. Stricture at 3 inches from anus; 3rd. Stricture at 5 inches from anus. Electrolysis was applied at once, with a bougie, having an acorn-shaped metallic bulb, equal to a No. 26 French urethral sound as the negative pole. This was introduced in rectum and held against the stricture, while the circuit was closed by the sponge electrode of the positive pole being held against the abdominal wall. A current from 6 cells absorbed in 20 minutes so much of the strictured tissue, that the bougie passed easily and also evidenced the other two strictures. Immediately a second electrode was introduced, size No. 28, French egg-shaped bulb, and this also passed all three strictures with a weak current. The stricture is very hard, unyielding, consisting of contracted cicatricial tissue, formed after the cutting operation. Tonic cathartic pills were ordered.

December 15. Electrolysis, negative metallic round ball 1¼ inches in circumference, 5 cells current for 20 minutes. At first no progress was made, but gradually absorption of the hardened mass took place, and then the bulb slipped through the stricture, and with more ease through the other two strictures.

December 19. Electrolysis, negative metal bulb 1½ inches in circumference for 25 minutes with a current of 7 cells. The cicatrix left from the former cutting is so hard, almost calcareous, that the task is very difficult to enlarge the calibre. The electrolytic power concentrated on the cicatrix absorbed slowly, and when the bulb had passed the stricture, the instrument could be moved about with ease. The second and third strictures are not so firm and yield easier to treatment, while the first stricture is not confined to a more contracted ring but has hard fibrous masses in the rectal wall extending to some distance around and above. The patient is much better, and has already regular evacuations of the bowels every day, the fæces being almost normal, have a conformity with the stricture.

December 23. Electrolysis. A bivalve speculum was used as the negative pole; 9 cells for 12 minutes enlarged the stricture to 2 inches circumference.

December 27. Electrolysis with a flat metal bulb as negative; a current of 10 cells for 20 minutes did better than at any previous séance, and absorbed much of the indurated tissue. After the séance the stricture was softer, there was less pain, and the last joint of the forefinger could be pushed through the stricture.

December 29. Electrolysis. Metal flat electrode, 9 cells for 20 minutes, caused more absorp-

tion, produced less irritation, no pain, no discharge and no bleeding.

January 12, 1883. Electrolysis caused more absorption without gaining on the calibre of the stricture.

January 24. Electrolysis under an anæsthetic. Dr. Meier administered ether. Positive large sponge electrode was held on abdomen, as negative a large platinum needle, spear-shaped at the end, was pierced in the lower margin of the annular ring of the stricture. A strong current of 20 cells was used, and the needle held in the direction, that it absorbed the tissue from the inside towards the free passage of rectum, thereby dividing that part of the stricture by electrolysis. Then electrolysis was applied with a metal bulb electrode 2⅛ inches in circumference, which passed easily through the strictures; after which a large metal bulb 3 inches in circumference could be introduced and passed up its whole length. The stricture is about one inch in length. The operation was done at my office, after which the patient went home, a distance of about three miles.

January 26. The patient is in good spirits, has not suffered any pain; uses rectal bougie. On digital examination found no stricture, the surrounding tissues softer, and the finger passed through a spacious calibre, without causing any pain. No anodyne has been taken.

January 29. Patient is doing very well. Wednesday she was operated on, Saturday she was dressed and walked about the room, and on Monday did the washing for the whole family of six persons, at the same time having a bougie in rectum for over an hour.

February 12. Electrolysis with metal bulb 3 inches in circumference, with a current of 10 cells for 20 minutes. No pain.

March 5. Endoscopic examination of rectum, some ulcerated spots were touched with iodoform. Ordered rectal suppositories.

March 8. Endoscope. Iodoform has done very well, rectum appears nearly healthy, there is scarcely any discharge. Bowels are almost normal. Ordered mist. biniodidi.

March 26. Electrolysis, with a metal bulb 3 inches in circumference.

March 28. Patient is improved in every way. Sphincter begins to be restored to an independent action. Endoscope shows healthy mucous lining and no ulceration, digital touch finds mucous membrane soft and normal. General health is much improved. Bowels are regular.

August, an ulceration was found in rectum and treated per endoscope.

July 23, 1884. Nearly one year has elapsed, in which patient has not come for treatment. On examination a tight stricture is found in the upper part of the sphincter. Electrolysis for 10 minutes did some good.

July 30. Electrolysis repeated.

August, 1884. The case at present is unsatisfactory. While a year ago the improvement was steady and promised to result in a brilliant success; to-day a relapse has taken place. The tight stricture is found in a different situation, but nevertheless we have a stricture in which parts of the rectum are involved. Patient is in indigent circumstances, has to bring up four children, and has neither time nor room nor means to take care of herself. Therefore the question comes up if it would be better to have an operation performed in an hospital. Dr. J. D. Bryant kindly offered to take the patient in his ward of Bellevue Hospital. He proposed to operate by exsection of the stricture, then pulling down the healthy rectal tissue and stitching it to the lower part of the anus. This plan could not be carried out, because it was found at the operation that the thickened tissue of the stricture extended too high up; therefore the stricture was divided by the knife and excised as much as possible. The operation was performed in a masterly manner and has benefited the patient very much. Patient had to use a rectal bougie off and on, and thereby kept good health since the operation. I have seen her four years after the operation, she using still the rectal bougie faithfully. Later I heard from her husband that a relapse took place, complicated with a tumor, and that finally she died in October, 1888.

Case 7 (*No. 2569*). Mrs. R. B. A., æt. 43 years—married—sterile—normal menstruation, habitually costive, which is common in the family. Six years ago had prolapsus uteri. Three and a half years ago had membranous enteritis; after which the costiveness has been alternating with diarrhœal discharges. Has a steady pain, the seat of which corresponds with the junction of the transverse and the ascending colon. Sometime ago had muco-purulent and bloody discharges from bowels, which, however, have ceased of late. Always was inclined to be costive and suffers from dyspepsia, has flatus, bad taste with acidity; particularly in the morning. Gastralgia—without using an enema can not have a passage from the bowels.

December 25, 1882. Examination: Uterus is small flabby, body retroflexed and pressed against rectum. Rectal tube passes only up to 5 inches, where it is arrested. A small rectal bulb passes, but encounters strictures as follows: 1st. Stricture 5 to 6 inches from anus, followed by hard indurations; 2nd. Stricture at 10 inches, is in colon.

Electrolysis.—Positive sponge electrode in hand, negative metal round bulb electrode was introduced in rectum, and met the same obstruction as before. A current of 10 cells was used for 15 minutes. The bulb was held against the stricture and soon widened the calibre, so that another

electrode could be used, which passed upwards 13 inches, through all strictures. On withdrawal of the bulb, which was 2 inches in circumference, did more good work by absorption and came out very easily. Ordered enemata to be taken systematically and regular; galvanic external applications. The positive sponge in epigastrium, the negative sponge electrode to be moved slowly in the direction of the peristaltic action. Tonic cathartic pills, diet and Leube's beef solution, etc.

December 27. Electrolysis as before. Electrode passed easier, found the strictured parts less contracted, also less pain in colon. Current of 10 cells was used for 15 minutes. Electrode passed upwards 13 inches. Electrode was 2½ inches in circumference.

December 29. Electrolysis with a current of 8 cells for 10 minutes. Negative electrode 3 inches in circumference passed easily.

January 2, 1883. Patient is improved in every way, and has good movements of the bowels, Electrolysis, flexible round electrode as negative passed easily up to 13 inches; then a long round bulb 4 inches in circumference passed the stricture easily. Patient felt so well that she went home. Have heard from the patient later several times, that she has further improved, and remains well. The last time I heard from her was four years after the treatment.

Case S (No. 2848).—Improvement.—G. E. W., æt. 23 years, medical student. September 8, 1886, presented himself at my office saying he had a stricture of the rectum, which formed one year ago, after a severe attack of dysentery. He had seen many prominent professors, a cutting operation had been performed, and he is not better. A full history of the case will be given below in the patient's own words, as given in a letter sent to me by him for the purpose of adding to the notes of the case.

On examination the stricture was found to be 3½ inches up from the anus, the index finger just reaching the beginning of the stricture, which is annular, defined just like a new formation in a large cavity of the rectum; the walls very indurated, not yielding nor stretching. On further exploration with a bougie, the stricture is found to be one inch long and seems healthy above. Small papillæ on the under surface of the stricture can be felt distinctly

Electrolysis was applied, with a very weak current, for 5 minutes. Positive sponge electrode was applied over sacral region; the negative direct to the stricture was a flat metal, one inch long.

September 19. Electrolysis was repeated in the same manner as before for 12 minutes; the negative bulb was 1 inch long and 1½ inches in circumference.

September 26. Electrolysis. Negative pole had at its end a round metal bulb, 2 inches in circumference, which passed the stricture easily; 8 cells current was used for 15 minutes. The bulb around which the electricity is working was 1½ inches long, the other part of the electrode being insulated. The current was weak, did not hurt, there was only a warm sensation in rectum, a little stronger than at the positive pole. Patient had no inconvenience during or after the operation.

October 3. Electrolysis. Negative pole larger than used before, was a round metal ball 2¼ inches in circumference and ½ inch long, was held in stricture for 14 minutes. Very little improvement, papillomas are growing larger.

October 8. Electrolysis. As negative a large round metal bulb 3½ inches in circumference passed all inside and up the stricture; current of 10 cells for 16 minutes. There is an improvement. Drs. Kelsey and Sands individually examined the patient and also pronounced an improvement.

October 15. Electrolysis, in the same way as last time; the electrode passed easily through, and three inches above the stricture. Current was stronger, full power of 12 cells. The stricture is unquestionably better, but the papillomatous growth has increased.

October 22. Electrolysis. The electrode passes still easier but papilloma is worse.

October 29. Electrolysis as before for 15 minutes with a strong current.

November 7, 14, and 22. Three applications of electrolysis. In the last two applications as a negative pole a metallic dilator was used, with two blades, which were extended by degrees to 4¼ circumference. The current was 5 milliampères for 12 minutes.

November 30. The twelfth application of electrolysis was given; there is now a decided improvement; stricture is softer, more dilatable, while the margins are distinct, with indurated tissues surrounding it.

December 22. Electrolysis, as a negative a new electrode dilator was used, which had been made for the case, it was extended to 5 inches in circumference, current of 14 cells for 14 minutes, measured 6½ milliampères.

January 9, 1887. Electrolysis with the new dilator electrode extended to 4½ inches. Stricture is much improved, but the growth appears to increase.

January 16. Electrolysis repeated as before, but circuit of electricity applied with a larger resistance, positive electrode held in hand, new dilator as negative in rectum was an improvement. 7 milliampères for 15 minutes.

From January 24 till March 9. Six more séances were held in the same manner as before. There certainly was improvement of the strictures, it was softer in every respect, the indurations were softer, and an instrument of 4½ inches

circumference could pass the stricture and while *in situ* could be expanded to 5 inches. Patient could not stay longer in New York and went south to his home, promising to return soon for further treatment. However, for some reasons he never came back. He has written several times informing me of the state of his health. His last letter will explain best the history of the case, and I copy it here verbatim in his own language, as also several other letters about the case.

April 10, 1889.

DR. ROBERT NEWMAN.

My Dear Doctor:—I will recite for you with pleasure, as nearly as I can now recall them, the principal points in the history of my case. I am 25 years old and my family history is good in every respect, my father being a German and my mother an American woman. My own health has in the main always been good. I have suffered ill-health at times from rather severe attacks of intermittent fever, and went through the usual diseases of childhood. Have also suffered much, from 1882 to 1885, from nervous exhaustion, cerebral hyperæmia and well defined symptoms of lithæmia, none of which were treated properly until lately. I have never had any venereal disease, and beyond suffering much at different times from constipation, I have never had cause to suspect that my rectum was not in a thoroughly healthy condition.

On September 14, 1885, I arrived in New York with the intention of taking the winter course of lectures at the University Medical College. Just after my arrival in the city I had an attack of dysenteric diarrhœa to commence. No especial cause was assigned for the trouble by either Drs. Weisse or Thomson (both of whom prescribed for me at different times), and it was evidently not considered of a serious nature, as I was able to attend lectures about half of the time during the two months I remained in the city. For two or three days immediately preceding my arrival in New York I had rather overtaxed my physical powers in sight-seeing in Washington, and just before my arrival in the city I ate two oranges which were rather old and unsound. An hour afterwards, having reached the college building and started out to look for a boarding-house, feeling much exhausted I dropped into a First avenue bar and took a glass of beer, which proved not to be good, and an hour afterwards I had to look for a water-closet. At no time was blood noticed in the passages, and at the commencement of the attack there was not much tenesmus, but some pain in the perinæum (which I had noticed a day or two just before arriving in New York, and was attributed to the much walking I had done in Washington).

About November 1 I was attacked with articular rheumatism, and left for home a few days afterwards. The trip home aggravated both the diarrhœa and the rheumatism, and for some days after my arrival home the rectum was so inflamed and sensitive that a cocoa-butter suppository with opium could not be retained. The salicylate treatment was used for the rheumatism and the subnitrate of bismuth and pepsin discarded, and opium in one form or another used instead for the diarrhœa. I recovered from the rheumatism after the usual six weeks, and the diarrhœa (or dysentery?) was controlled soon afterwards.

While my dysentery was worst my physician here endeavored to make an examination of the rectum by introducing a duck bill speculum, and although nothing was discovered at this examination it is entirely probable that this lack of discovery was owing to the examination having been unskillfully made, as after straining much at stool two hours after the examination I removed with my fingers, from within the grasp of the sphincter ani, an annular pendulous growth as large as an ordinary lead pencil. It was about 1½ inches long, hollow (or annular), and appeared more like the pedicle of a villous tumor than anything else; no trace of a tumor was visible, however. No microscopical examination was made of this growth.

Soon after the dysentery was checked I began to suffer with symptoms of stricture of the rectum, and in the latter part of March, 1886, I started north to consult experienced surgeons.

Early in April I was examined in Washington, D. C., by Dr. J. Ford Thompson, and he found a very close stricture commencing about 3½ inches from the anus. The stricture was so tight at this time that he could not penetrate it with his smallest bougie. Dr. A. F. A. King was present one time at Dr. Thompson's office and examined me, and although he evaded giving a positive answer I fully understood that he agreed with Dr. Thompson in his diagnosis, viz: that if the stricture were not already of a cancerous nature, it would become so very soon. This opinion Dr. Thompson declared to me and to my brother on several different occasions. Dr. Thompson sent me to Dr. Sands for examination. You will find Dr. Sands' opinion fully expressed in a copy of the letter enclosed, written to my preceptor (from whom I took a letter of introduction). This same exuberant growth removed from the lower margin of the stricture by Dr. Sands forms the foundation for all of the examinations made by the microscopists (that of Dr. Edward Schaeffer was given in writing, and is enclosed). I was examined next by Dr. L. A. Stimson, and he said at once "the growth does not feel like a cancer," but he declined to commit himself in a diagnosis until he had had the opportunity to dilate the stricture and explore it thoroughly. I consented to the examination under ether, and at my request Dr. Chas. B. Kelsey was present at the examination in the Presbyterian Hospital, May 18. In attempting to dilate the stricture it was torn, and linear rectotomy was performed at once. Dr. Stimson's opportunity for examining the stricture thoroughly was better than that of the others, who did not ask for an examination under ether. He said the stricture involved about 1½ inches of the bowel and was papillomatous in nature. Dr. Kelsey agreed with Prof. Stimson's diagnosis, and based his own on the microscopical opinion given him by Prof. Stimson.

I was very sick after the operation of rectotomy, caused, I have always thought, by having Fowler's solution of arsenic suddenly discontinued, which I had taken for some time immediately preceding the operation, in large doses, according to the direction of Dr. Sands. I was removed from the hospital to my brother's in Washington, D. C., and after three weeks was able to be out, and Dr. Thompson commenced to dilate the stricture with bougie.

July 4 I was examined by Prof. J. McLane Tiffany, of Baltimore, who made both a digital and microscopical examination, and he said, whereas he did not regard the stricture as cancerous at the time he examined me, that he thought it would undoubtedly become so in time, as my case had started in just the way most of the cancers of the rectum commence.

On July 5 I was examined by Dr. D. Hayes Agnew, who pronounced the stricture cancerous just as soon as he had made the digital examination, and he confirmed his diagnosis with the microscope, declaring it cylindrical epithelioma (agreeing very nearly, you see, with Dr. Sands' diagnosis).

I was examined by Dr. Edward L. Keyes soon after I first met you in September, and he said he would pronounce the stricture benign, unless the microscope declared otherwise. He saw no objection to trying electricity, but could not recommend it as being likely to benefit me any. The microscopic specimens prepared by Dr. Edward M. Schaeffer from the exuberant growth removed by Dr. Sands were examined by Drs. Biggs, Geo. L. Peabody and Prudden (of P. & S.), and they all de-

clared the growth benign, but Dr. Prudden added that it would in all probability become malignant in time, thus agreeing nearly with Dr. Schaeffer's examination, as you will notice.

Now all these diagnoses were made up entirely from the case, as no two men whom I consulted knew anything of the opinion given by any other man in the case (excepting Drs. Kelsey and Stimson) until his own opinion had been given.

I hope you remember the very favorable impression my improvement caused Dr. J. Ford Thompson to form of the electrolytic treatment. When he examined me in March of 1887 he said, "You are a great deal better than when I saw you last, and your improvement can be due to nothing else you have tried save the electricity." "You have indeed been very lucky in trying it," he added.

I hope you will be able to find in my letter about what you wish, but if not do not hesitate to command any other information of me which I may be able to give you. I am only sorry I could not have remained in New York, and have been continuously under your treatment, when by now I would have been either entirely well or so much improved that even Dr. Keyes himself would have to admit that it had accomplished what he had several times declared it would not accomplish.

Dr. Kelsey, who was, at the time of my leaving New York, sanguine over the prospects of having found a new remedy in electricity for stricture, told my preceptor shortly after he called on you in New York last winter that he had since given electricity a thorough trial and that it was an entire failure. Dr. Wm. H. Thomson advised me once to continue the current, as the principle was a correct one. No change in stricture since last writing.

Hoping this will find you enjoying the very best of health and prosperity, I am, Very truly yours,

G. E. W.

COPY OF DR. EDW. M. SCHAEFFER'S REPORT.

Washington, D. C., June 26, 1886.

Microscopical examination of piece of growth from rectum. Left by Mr. G. E. W., pr. Dr. J. E. T. The sections were cut in the microtome and afterward stained with carmine and mounted in balsam.

The sections of largest diameter exhibit a rounded outline, approximating an oval, with a deep cleft extending to the centre, on one side.

Under the lens the following points are noticed:

1. The entire circumference, including the cleft mentioned, is lined with mucous membrane, showing the simple glands in their normal position, though somewhat hypertrophied in places.

2. Immediately below the simple follicles is seen the minute muscalavis submucosa, thick and well-marked in some places, irregular or wanting in others.

3. Several slightly enlarged "solitary glands" are seen, partly above oval, partly below the mus. submucosa.

4. The centre of the section is occupied by a connective tissue stroma, containing sinus of veins, tortuous arteries and lymphatics, the coats of all these vessels being in some places thickened and their neighborhood marked by a small-celled "exudation brood."

5. In no places throughout the twelve different slides studied is there to be seen any resemblance to scirrhus or alveolar cancer, or to epithelioma, or other malignant or semi-malignant growth. The growth then, so much of it as is included in these sections, is a nodule formed by a swelling of the submucous tissue, which is hypertropied, and upon which the glandular layer and epithelial coating of the intestine is arranged with as near an approximation to their usual position as is consistent with a distorted base of growth. The tumor is, however, different from a simple hypertrophy of the tissues involved, inasmuch as both in the mucous layer and also in the central connective tissue, there are indications of infiltration with the small round cells mentioned, more especially in the vicinity of the solitary glands.

Such infiltration, while common to many forms of inflammation, is an almost constant phenomenon in the vicinity of carcinoma, and as such it is to be regarded as suspicious in this connection. The very hypertrophy of the glands is also common to innocent as well as to malignant growth.

On the whole, then, I regard the prognosis as unfavorable, so far as based upon the probabilities of the direction which the growth may take in future.

EDW. M. SCHAEFFER, M.D.

COPY OF DR. H. B. SAND'S LETTER.

No. 35 West 33d St., New York, May 5, 1886.

Dear Doctor:—I have examined Mr. W. carefully, and have come to the unpleasant conclusion that his disease is malignant.

I find within reach of the finger, a close stricture of the rectum which is surrounded by a hard infiltration, that has all the characteristics of carcinoma.

When he came here I removed a small exuberant mass projecting from the lower margin of the growth, and caused it to be submitted to microscopic examination. It seems to be a cylindrical epithelioma, such as often occurs in this situation. Considering the disease is probably malignant, I would advise palliative treatment, and have instructed the patient what to do in the management of his case.

In my opinion, the disease is situated too far from the anus to make desirable any attempt at extirpation.

Should time prove the diagnosis to be erroneous, and the stricture turn out to be simple in character, linear rectotomy could be performed with a fair chance of recovery. But in the present circumstances I believe that any operation would be injudicious. Very truly yours,

To Dr. O. B. M. H. B. SANDS.

LETTER OF DR. L. A. STIMSON (COPY).

34 West 33d St., New York, June 16, 1886.

Mr. G. E. W., My Dear Sir:—I am glad to hear that you are so much better, although my anticipations when you went away were by no means so glowing as yours. If you are right in attributing your improvement to Fowler's solution, the sooner you get in the habit of taking it the better, in my judgment.

As to the character and extent of the rectal trouble, I have nothing to add to what I told you and your brother. The growth is papillomatous, with at present no infiltration of the deeper tissues, but I believe it should be placed at rest as far as possible; that is, that the stricture should not be allowed to reform. I should advise that it be at once dilated with the finger or large bougie to a calibre of an inch or more, and kept at that size by the regular use of bougies. I think it would be more troublesome to dilate it at once to full size than to dilate it gradually. Very truly, R. H. STIMSON.

Report of remarks of Dr. J. Ford Thompson at a meeting of the Medical Society of the District of Columbia, Dec. 7, 1887: "He never operates in the condition to which Dr. Reyburn refers. He thought electricity an agent for good, but it is too apt to be abused by enthusiasts. A few cases of stricture of the rectum treated by Newman, of New York, is worthy of mention. Dr. Thompson diagnosticated cancer of the rectum in a student of medicine; Drs. Agnew and Sands agreed with his diagnosis. He then went to St. Luke's Hospital in New York City, where a young physician cut the stricture. The patient stayed in the hospital until the wound healed, and then went to Boston, where he was under treatment for some time. He was almost insane and was sent to his mother in a deplorable con-

dition. He heard of Dr. Newman and determined to try his treatment. Dr. Newman applied electricity for several months. In about eight months a stout, healthy-looking man entered Dr. T.'s office, but was not recognized. He said Dr. N. could introduce an electrode as large as a hen's egg. The rectum was dilated, and there was a ring of hard tissue present, but the man was apparently healthy. He does not believe that this man has been cured, but he is practically well and may live a useful life for many years. In large hospitals such cases are surgical curiosities."

Dr. J. Ford Thompson is professor of surgery and the leading surgeon in Washington, D. C., a man in good standing in the profession, and appreciated for his good qualities and character. While he openly declares that he does not believe much in the praised effects of electricity in medicine, his voluntary statement of the improvement in this case by electricity is of so much more weight, and proves the honesty and uprightness of the professor, for which I tender my sincere thanks.

This case is of great interest in many respects. The documentary evidence, copied from the original letters, I have given verbatim, so that the history of the case is made complete and stands recorded and verified as facts. While I have given facts only, I make no comments or speculations on the case besides the claim that the stricture was benefited by electrolysis. I do not know whether or not the patient would have been cured had he remained longer under treatment. The next two cases, Nos. 9 and 10, are reported by Dr. J. G. Davis, who sent the patients to me for operation, was present while they were treated, and took notes of these cases.

Case 9 (No. 3001).—Mrs. J. M. R.; age, 46. *History:* Born prematurely; always a frail child; had almost all the ailments childhood is heir to; all through her earlier years had "falling of the bowels," as she termed it; menstruated at 14 years of age; caught cold the first time by exposure in severe rainstorm; even after had the most excruciating pain at each returning period, growing worse with the progress of time. There was a history of constant constipation.

In June of 1863, during defecation while straining, something seemed to tear or give way; profuse bleeding followed, which recurred very frequently from this time on. In the autumn of 1863 she was married. The general health improved but little; the dysmenorrhœa, however, nearly ceased. November, 1864, she gave birth, prematurely, to her first child, it only living three days. The rectal (or bowel) trouble grew much worse. Stomach troubles now began—most violent dyspepsia, bowels swollen, constant eructations of gas. Then followed typhoid fever, from which patient did not recover for forty days, a mere wreck of her former self. Convalescence was very much retarded by the rectal trouble, hæmorrhoids having developed during the pregnancy. In the three months following had seventeen attacks of "wind colic;" she says the doctor in attendance at that time (1865) so termed it. Nothing but morphine would stop the extreme nausea. Patient had now become a confirmed invalid. She dragged along with constant use of laxatives, emollient ointment and a syringe. The menstrual periods entirely free from pain after the birth of her child. Patient by an indominant will power seemed to fight her way back to tolerable health. With all these disadvantages she got along fairly well till August, 1885; malaria ran into a continued fever of a typhoid type; she recovered slowly. In December of same year was taxed greatly by sickness in the family. Trips up long flights of stairs, coupled with the care and anxiety, seemed to aggravate the already existing rectal trouble, and it became unbearable. She sought medical aid. From the nature of the stools and the history I suspected stricture in ani. On examination, found stricture within the sphincter ani, with masses in the rectum. I advised surgical aid. She submitted to an operation for the removal of the tumors. The old fissure (of so many years' standing) was full of cicatricial tissue, which was removed with the masses. Patient now began to recover.

In the healing process, notwithstanding there was dilatation almost every day, the stricture became more and more troublesome. Oil injections had been used with every stool. The surgical operation was a perfect success, inasmuch as all the diseased tissue had been removed. The resulting cicatricial tissue, with the stricture, made a condition that beggars description. The case seemed almost hopeless. Hearing, through another physician, of the success by electrolysis in urethral strictures, I thought that possibly my patient might get relief from that source. I proposed a consultation with Dr. Robert Newman, of Thirty-sixth street, in January, 1887. Dr. Newman confirmed at once to the use of electricity. The supersensitiveness of the parts required the use of muriate of cocaine. Séances as follows:

January 4, 1887. Examination at Dr. Newman's office. He found stricture in ani; backwards it was densest in the cicatrix, from the old fissure between the internal and external sphincters.

January 19. Electrolysis. Felt the warmth for hours. It also caused a very free evacuation of the bowels (as though physic had been administered). The day following bowels moved also like a regular stool, the first of the kind for years. Patient much improved.

January 26. Electrolysis. Again she felt the warmth for hours; 4 milliampères, and same relief as before, with the bowel movements.

January 31. Electrolysis, as before. Small metal bulb electrode as negative to cicatricial portion of the stricture, held posteriorly between the sphincters; 4 milliampères for six minutes; positive sponge in hand.

February 7. Electrolysis as before, the patient still improving.

March 28. Electrolysis, same as before, with same result. Patient left the city for a time.

July 7. Patient returned again. Had electricity applied as before; experienced even better results than before.

July 28. Electrolysis repeated, 6 milliampères. Current was felt more sensitively, owing to the near proximity of the cicatrix to the sphincter, and it contracting all the time. Patient again left the city for the West. Patient so much improved, has grown a little neglectful.

January 31, 1889. Had a séance again with Dr. Newman. He treated her with his new Cabinet battery, 13 to 17 cells for ten minutes. Negative metal bulb in ani, covering cicatrix by one side, the other side protected by the finger. Did more good than even before. After this séance but little cicatricial tissue left.

March 2. Electrolysis repeated with 11 cells, 4 milliampères.

March 26. Same repeated. Scarcely any cicatrix perceptible. Shall advise supervision of condition from time to time, for some months to come. Patient has improved correspondingly in every other way, and cannot express in words her relief from the horrible condition she suffered from so many years.

Case 10 (No. 3005).—Mrs. E. M. B., aged 42 years. *History:* Born in Connecticut, of healthy parents. She was not robust as a girl. Did not menstruate till she was 16 years old. She married at 20 years of age. Had no bowel trouble till she became enceinte. Then had hæmorrhoids for the first time; suffered severely. First and only child was born when she was 21 years old. From this time on, says she was a constant sufferer with these hæmorrhoids. Tried physicians everywhere; could get no permanent relief. She says Dr. Tucker, of Brooklyn, told her "her bowels were growing up;" this was in 1882. In 1883 Dr. Calkins, of Jersey City, operated upon her by cutting away some of the masses and injecting others hypodermically, she says, with nitrate of silver and carbolic acid (judging from the odor and stains left on her linen). Previous to this, and subsequent to the birth of her son, she had three miscarriages or abortions. All this time she has had constant and obstinate constipation, with pain in defecation, burning sensation in the rectum, headaches, dyspepsia, with swelling of the bowels. To use her own expression, "she had barrels of gas," the eructation being very disagreeable. She was dragging out a miserable existence. At this stage of the case I was called in to treat the uterine complications. On examination (May, 1886), found uterus very much enlarged and congested, with prolapsus and a marked lateral displacement, also erosion of the os. Patient candid in giving her history; dates all her trouble to her first pregnancy. Has been married twice; no children by her second husband. Has had no specific trouble, and no history that would lead to such a supposition. I treated the complications by the usual methods. Patient improved very much in her general health; still the rectal trouble distressed her greatly, large masses protruding with every defecation. She would be prostrated with the distress. I told her she must have surgical help before she could recover. She concluded to go to the hospital. She entered July 3, 1886, was operated upon the 5th. The fibrous masses were removed by the knife. The surgical operation was a success, as far as the removal of the masses was concerned. As the points of incision healed, the cicatricial tissue formed increased the rectal difficulty. There were no evacuations of the bowels except under the use of laxatives and the syringe. (Will say, after Dr. Calkins' operation there was a very aggravated inflammation of bowels and uterus.) She continued with emollient ointments, laxatives and the syringe till late in the autumn of 1887. Patient returned to me for treatment; said she must have speedy relief, or she could not live. From the symptoms I had suspected stricture of the rectum for some time, but there was such a state of inflammation that she could not make up her mind to submit to a thorough examination. I, however, used cocaine 4 per cent. solution. On examination, found my fears confirmed. I at once proposed consultation with Dr. Newman, as he had benefited my previous case so much and so quickly. January 25, 1888, I took her to Dr. Newman's office. Her bowels were very costive and full of gas; rectum sore within and around the anus; fæces can not pass as a formed mass, only by laxatives and aid of syringe. Around the anus were remnants of hæmorrhoids rolled out of the mucous lining. Between the sphincters are denuded surfaces irritable to the touch. Sphincters are in constant contraction, causing pain and resisting the entrance of the finger or speculum. This examination was performed with or by the aid of cocaine. A metal egg-shaped bulb (No. 33 French) meets resistance at 3 and 5 inches, negative pole (with this bulb); positive in the hand. Electrolysis, 5 milliampères, overcame the resistance and passed up 9 inches. Cocaine was used; also prescribed a saline apperient; also Mitchell's suppositories: No. 10. ℞. Ext. belladonna, gr. ss; ext. opii, gr. 1. Circumference of electrode, 1¼ inches.

January 28. Electrolysis. Flat metal electrode 1¼ inches in circumference, as negative, passed both strictures with comparative ease; went up 6

inches, 5 milliampères for fourteen minutes.

February 1. Electrolysis. Round electrode 1¾ inches in circumference passed up as before, 9 inches.

February 8. Same electrode as used the last time passed with more ease and up to 12 inches.

February 11. Electrolysis. Round vaginal bulb electrode 2¼ inches in circumference passed quite easily up to 5½ inches. At this séance galvanism was used externally, positive pole on the pit of the stomach, negative moved in the direction of the colon, to increase peristaltic action. Did much good; caused the dislodgment of old fæcal matter.

February 25. Electrolysis as before, same bulb passing up 6½ inches. External galvanism again.

March 28. Electrolysis as before. Hæmorrhoids in anus giving trouble. Prescribed ointment to be applied with Pile syringe. R. Ung. hydrarg. ammoniatum.

April 7. Electrolysis as before. Same bulb, round, 2¼ inches, passed by degrees to 8 inches; 10 milliampères; also prescribed pills:

Hydrastin 40 gr.
Ext. gentian 20 gr. One, ter. in die.
Ft. pill No. xx.

April 21. Electrolysis. Large round bulb passed quite easy. Hydrastin pills doing good.

May 2. Electrolysis, same as before; 2¼ inch bulb passed to six inches with ease.

June 11. Electrolysis, same as before; strictures nearly gone.

July 7. Electrolysis as before; case still improving. Patient left the city for the summer, much improved in health.

September 15. Electrolysis as before she went away. Large bulb passing readily to 8 inches.

October 6. Electrolysis as before, with the same result.

November 14. Electrolysis as before, same large bulb electrode passed to 11 inches with ease, strength of current 10 milliampères.

December 12. Electrolysis as before, stiff flat electrode passed to 5¾ inches.

May 18, 1889. Reëxamination at Dr. Newman's office. Rectum was found in good condition, a large metal bulb passed easily, without finding a stricture.

Case 11 (No. 3041) — Stricture and Ulcerations in Rectum.—H. K., æt. 26 years, married, bookkeeper; complains of dysentery, frequent bloody stools, pain in rectum, particularly on defecation. When 8 years old, he had daily four to six passages, which were diarrhœal in character and mixed with blood. There was prolapsus ani to such a degree that the rectum protruded outside almost every day. This state lasted for years, until he was almost 18 years old. Then he was comparatively well until eighteen months ago. He had dysentery and the bowels acted similarly as during his former illness. He had loose bowels, frequent passages of a dark color mixed with blood, pain, capricious appetite, meteorisms, lost flesh and became very weak. He has been treated in turn by different eminent physicians, who prescribed medicine for him, but neither of them examined his rectum.

June 10, 1888. Examination. Rectum is so sensitive that a digital examination could not be made. Injected a solution of cocaine, and then made an examination with the endoscope. Found rectum very much inflamed, with a high red color, mucous lining congested with several ulcerations, from which blood oozed. Endoscopic tube would not enter further than 4 inches, where it was arrested, and a stricture found. The ulcerations were touched with a solution of nitrate of silver. Injections of soap and water were ordered, also a weak solution of cocaine in case the pain should be troublesome.

June 17. Electrolysis; positive sponge electrode in hand, negative flexible electrode with a round metal bulb at the end, of 1¼ inch circumference, in rectum, was arrested at 4 inches by the stricture. A current of 5 milliampères acted rather severely, patient complaining of pain, and had to be reduced to 4 milliampères. After seven minutes the bulb slipped through the stricture, and then was inserted 12 inches up, without finding any other stricture. On withdrawal, the stricture was further electrolyzed. The whole séance lasted twelve minutes.

June 24. Endoscopic examination found the whole rectum much improved; the tube did not pass the stricture. The ulcerations were touched with the solution as before.

July 1. Electrolysis, positive in hand, negative in rectum, with a round metallic bulb 1¾ inch in circumference. There was not so much sensitiveness and a current of 10 milliampères was tolerated, the bulb enlarged the stricture more and after five minutes passed it, and was further introduced to 8½ inches. Séance lasted eight minutes.

July 7. Endoscope revealed much improvement, ulcers have nearly healed up, mucous lining is less congested, color is better, a light application with a brush given. A tonic and appetizer ordered.

July 13. Electrolysis Negative flat bulb, circumference 1¼ inch, passed up only 3½ inches, 8 milliampères for six minutes.

July 20 Endoscope found parts very much improved, in fact almost well. Patient feels well now, has every day only one passage, which is nearly normal; fæces well formed, but a little flattened. Ordered one pill at night of hydrastin.

August 3. Electrolysis. Negative round metal bulb 2¼ inches in circumference for twelve minutes, with a current of 10 milliampères, passed well through stricture.

August 17. Reports progress in every way; is

almost well. Endoscopic tube passes through the stricture.

August 24. Electrolysis Negative bulb 3½ inches in circumference passed stricture after four minutes. Current increased to 12 milliampères, was well borne. Séance eight minutes.

September 2. Electrolysis. Large vaginal conical electrode passed stricture, enlarging it to 4½ inches in circumference, ten minutes, current of 10 milliampères.

September 30. A large bougie 4½ inches in circumference passes without an electric current. Patient is well. Bowels are regular, evacuations of a brown color and normal in every way. He has a good appetite, has gained flesh, and feels good in every respect.

1889. Have seen him recently, he had no relapse and kept well.

Case 12 (No. 3061).—Miss K. L., æt. 30 years, single. Has complained for years of a stubborn constipation with pain on defecation, stools changing from flat ribbon-like fæces, with diarrhœal discharges, and again constipation of one movement in a week; sometimes a protrusion of a mass from anus. She has taken medicine and injections with partial, temporary relief, but has opposed an examination. Her general health has run down, she has lost flesh and ambition, so that necessity compelled her to permit an examination.

August 31, 1888. On digital exploration of the rectum a semi-solid tumor was found 2½ inches from anus, with uncertain margins, and hard masses in it. There is a decided stricture, the cavity in rectum ends abruptly like a cul-de-sac, so that it is difficult to find with the finger a continuation of the passage. The semi-solid mass is movable and can be pushed upwards. A small bougie passes the stricture, then advances easily and enters the sigmoid flexure.

September 6. Electrolysis. Finger reaches the tumor at 2½ inches from anus, when the continuation of the passage is lost, and the tip of the index finger appears to be in a cul-de-sac. A flexible electrode with a round bulb at the extremity, however, finds an opening, and by an electric current of 7 milliampères passes 9 inches upwards. The stricture is felt distinctly from 2½ to 3½ inches, and surrounding it is the tumor.

September 12. Electrolysis. Positive sponge electrode in hand; as negative a stiff electrode, with a flat metal bulb 1½ inches in circumference, with a current of 10 milliampères for twelve minutes, passed only 6 inches up. The tumor thereby was greatly diminished in size. The nature of this tumor I could not tell, but know positively that it is no hæmorrhoidal tumor.

September 19. Electrolysis. Negative pole, with a rectal round metal bulb 1¾ inch in circumference, passed 12 inches up the rectum and over sigmoid flexure easily. There is more marked improvement. Ten milliampères for fifteen minutes.

September 28. Electrolysis with 4 milliampères for eight minutes made marked improvement, tumor further diminishing.

October 5. Electrolysis repeated as before; 26 cells; 12 milliampères for fifteen minutes.

October 30. Electrolysis as before. Tumor has much diminished in size, is now only a small mass, as large as a big hazel-nut.

November 16. Electrolysis. Negative flat stiff electrode 1¾ inch in circumference passes well up to 6 inches with a current of 10 milliampères for fifteen minutes.

December 2. Electrolysis. Negative large, round bulb electrode, 10 cells, 5 milliampères for five minutes; then 20 cells, 12 milliampères, gave no inconvenience or unpleasant sensation. Electrode advanced up to 10 inches, but stricture at 3 inches was felt.

December 15. Patient feels well, a large vaginal bulb as negative electrode, 3 inches in circumference, passed easily up with a current of 6 milliampères. Séance 9 minutes. Patient is so well that she has discontinued any further treatment.

From other reliable sources two interesting cases are reported as follows.

No. 13.—Case of Stricture of the Rectum Treated with Electrolysis by Samuel Benton, M.D., M.R.C.S.—(*London Medical Register*, May 12, 1888.) *History:* S. T., aged 39 years; a married woman; has had five children; two living; youngest six years old. All her confinements natural; the last took place three years since; it was an eight months child, and lived five weeks; the other two children were prematurely born and died a few hours after birth. She has not had a miscarriage, and has never suffered from constipation or syphilis. About five years ago, after stool she had to lie down for ten minutes with acute pain at end of bowel; and sometimes a little bleeding occurred, which made her dread having a motion. Soon after this she noticed that the fæces were small, and defecation was accompanied by a bearing down sensation. Latterly, her symptoms have become more severe, the bowels acting three or four times a day; stools liquid.

Examination of Rectum.—A polypoid growth seen protruding outside anus about the size of a pea. Two inches from anus a stricture can be felt, which will not allow the little finger to enter.

A No. 1 rectal bougie was carefully held against the stricture for two minutes, but it could not enter. A No. 27 French urethral bougie was the largest instrument that could be gotten through the stricture.

Treatment.—Feb. 27, 1887. At first gradual dilatation was attempted by holding a metal electrode, equal in size to a No. 29 French urethral bougie, against the stricture for several minutes, but it failed. The negative pole of a

continuous current battery was thus applied to the electrode by my colleague Mr. W. T. Whitmore; at first 4, afterwards 6 cells used; strength 15 to 20 milliampères; the patient merely feeling a little tingling sensation; but no pain. After six minutes the electrode slipped through the stricture.

February 9. A No. 29 French bougie passed of its own accord, after being held in the stricture. An electrode applied equal to No. 33 French negative current, 8 cells, used for half an hour; this went into the stricture, but not through it.

February 16. Patient states that she has had far less straining at stool, and feels decidedly better; bowels acts usually three times a day. An electrode equal to No. 33 French, or large No. 1 rectal bougie, applied for four minutes, but did not pass. Negative pole attached, and 6 cells used for 12 minutes; 8 cells applied, strength a little over 15 milliampères, for 15 minutes; the electrode then slipped through the stricture.

February 22. Catamenial period being in, treatment postponed.

March 3. Electrode applied, equal to No. 2 rectal bougie, for 30 minutes; 6 cells used, strength 15 milliampères; it passed into the stricture and was allowed to remain for 10 minutes. After this séance she felt so much relieved that she discontinued coming up to town for treatment.

February 27, 1888. A lapse of one year. Patient feels much better; she is stouter, has far less bearing down pain, and is able to pass a motion the size of her little finger. A No. 2 rectal bougie passes through the stricture without difficulty. She states that during the past year she has not been required to consult a doctor. "I am in much less discomfort; feel better in every way, and have derived great benefit from the treatment."

For the first few months after she left off coming to London she gave herself, about once in three weeks, a warm injection; but thinking this brought back the bearing down pain she discontinued it. Her bowels still act three times a day—in the early morning, after breakfast, and in the evening. She always sleeps lying on her back; bearing down and discomfort follow it. (She lies on either side.) A large sized No. 3 rectal electrode applied for ten minutes; 10 Leclanché cells, 2 milliampères, and then 15 cells, 5 milliampères applied for 6 minutes. It enlarged the entrance to stricture, but did not pass through.

March 6. She has felt very well since last séance. A small No. 3 rectal bougie passed through the stricture; No. 2 electrode, large size, passed into the stricture, and held there for 15 minutes; 10 cells used, strength 2½ milliampères.

March 19. Patient feels better. The index finger can be got into, and a No. 4 rectal electrode slips through the stricture. Negative pole attached to No. 4 electrode, 15 Leclanché cells used, strength 5 milliampères for 6 minutes; then 20 cells used, strength 10 milliampères, and left in the stricture 25 minutes.

Remarks.—For rectal work I prefer the metallic bulb of the electrode to be acorn shape; electrodes of this sort have been made for me by Messrs. Coxeter & Sons. Urethral electrodes should be made with egg shaped bulbs, as recommended by Dr. Robert Newman of New York. From the above notes it will be seen that this severe case of stricture of the rectum yielded to treatment by electrolysis, and at the end of a year the improvement was maintained. During this year no bougie was used, and no medicine taken. There is an element of risk about proctotomy, and had this operation been performed, she would certainly have had to keep her bed for a considerable time, and probably been condemned to use bougies for the rest of her life; gradual dilatation was attempted but failed. The patient whilst under electrolytic treatment was able to carry on her usual domestic duties, but the great interest of this case centers in the fact that the benefit derived was maintained after a cessation from treatment, for twelve months. Dr. W. T. Whitmore of London, has also treated cases sucessfully with electrolysis. His paper was read at a meeting of the West London Medico-Chirurgical Society and it is now in press, as I perceive from a private letter of Dr. Whitmore. The cases of Dr. Benton have not had a relapse in two years, as he reports to me in a letter as follows:

COPY FROM DR. SAM. BENTON'S LETTER.

LONDON, June 1, 1889.

Dear Dr. Newman:—The two patients who I treated for stricture of the rectum by electrolysis, and published the cases, have remained well and are permanently benefited. I have not had any more cases suitable for this method of treatment, or I should certainly use it again, etc. Yours,—

Case 14.—Dr. S. T. Earle, Jr., reported this case to the Medical and Surgical Society of Baltimore, and kindly has sent me the following notes:

Mrs. H. White, æt. about 30 years, has been troubled with difficulty in evacuating her bowels for the last seven or eight years. She presented herself to me for treatment by the advice of Dr. Rohé, January 26. I found a very tight stricture of the rectum, the result of specific lesions, about 1 inch above the normal site of the anus, and extending about 1 inch up the rectum. There was a considerable discharge of a thin muco-purulent character, a neoplasm as large as a walnut in Douglas' cul-de-sac, and the anterior wall of the rectum below the stricture was considerably thickened. Her evacuations were nearly always fluid in character, yet caused considerable pain, and

when moulded were very narrow, and ribbon-shaped, and their discharge was attended with excruciating pain. The stricture was so tight as only to admit an ordinary size probe. She suffered very much with dysmenorrhœal pains, and copulation was also very painful. Also had frequent and severe headaches. At the suggestion of Dr. Rohé I determined to try electrolysis alone for the treatment of her stricture, unaided by any internal antisyphilitic remedies. I commenced the treatment with a Barrett chloride of silver battery, using from 10 to 15 cells without measuring the amount of current with a galvanometer. I used the negative pole in the rectum, and commenced with an electrode $\frac{1}{16}$ of an inch in diameter, gave her two sittings a week, of fifteen minutes each. By the sixth sitting I had gradually increased the size of the electrode, until I had gotten to use one between $\frac{5}{16}$ and $\frac{6}{16}$ of an inch in diameter. Not being satisfied with the progress made in the absorption of the neoplasm, and desiring more current strength with less electromotor force, I substituted a Waite and Bartlett battery for the one I had been using—at the same time measured the amount of current used with the same make of galvanometer. I thereafter used from 50 to 100 milliampères of current. While the last mentioned strength of current produced considerable irritation of the rectum for several days, the intermediate strengths mentioned did not. Under the increased amount of current strength the neoplasm began to be absorbed rapidly, and disappeared entirely by the expiration of six or eight months; the discharge from the rectum of muco-pus lessened rapidly, the stools came with less and less pain, and soon began to be moulded, the dysmenorrhœal pains gradually passed off, copulation grew less painful, and she improved very rapidly generally. As cool weather came on the following fall, about eight months after I had begun the treatment, she again began to suffer very much with her head, and I placed her on potassium iodide internally, having satisfied myself that the good results gained in the rectum had been entirely due to electrolysis. This soon relieved her headache. After having gotten to the point where she had scarcely any trouble with the rectum, I then directed her only to come for treatment about once in two weeks, and she has continued to come at this interval ever since, with the exception of between two and three months in the early part of this year, when she did not come at all. When she did return I found the stricture a little tighter, but in two sittings got it back to where it formerly was. I did not exceed in the size of the electrode the one between $\frac{5}{16}$ and $\frac{6}{16}$ of an inch in diameter, as that was sufficiently large to allow her to have moulded stools with scarcely any pain. I should have stated that this patient has been treated three years prior to my seeing her, first with gradual dilatation by bougies, then by a linear proctotomy; the latter, however, was not followed by dilatation, and of course healed, leaving her in a worse condition than before. This obliterated her normal anus.

Dr. W. E. Stevenson, of London, writes in Cooper's Treatise on Diseases of the Rectum as follows:

"Strictures of the rectum can, like all other strictures, be treated by electricity. The amount of success achieved by this means depends upon the nature of the obstruction. In some cases cure can be effected, in others relief only can be obtained. But in these latter cases, where the stricture is due to cancer, life can be prolonged for a variable period, and made more endurable by the relief of pain; and that last and terrible expedient of colotomy can be postponed and perhaps dispensed with altogether."

As these words coincide exactly with my own experience, I took the liberty to make the quotation, and consider it of importance, as it comes from the best authority in London.

In recapitulating the facts in these twelve cases we find some interesting items. It seems that females are more inclined to have stricture; as out of twelve cases only two were men. Their ages were mostly between 30 and 40, the youngest 24, the oldest 62 years old. The two males were comparatively young men, respectively 23 and 26 years old. Eight cases were single strictures, four had multiple strictures. The duration of the malady was from 6 months to 20 years; the causes varied, but hæmorrhoids and constipation were important factors; other causes were syphilis, venereal, enteritis and dysentery. It is certain that a rectal stricture may follow any inflammation of the rectum. One case had the complication of five fistulæ, commencing in rectum and ending externally in different parts in vulva and gluteal region. As soon as the stricture was cured, the fistulæ healed up without any treatment. Only two cases had no previous treatment; two had medical, and the balance surgical treatment; six of which had been operated upon with the knife. Not in a single case had the previous treatment been successful, some were entire failures, and all that can be claimed in some exceptional instances, was a temporary relief followed by relapses. Even the most sanguine operator will admit that proctotomy must be followed by the use of a rectal bougie at regular intervals. If we now compare all other methods used formerly, with the treatment by electrolysis, we find that the latter has improved every case at least, and in the majority of cases has effected a cure. The three cases, 5, 6, 8, were certainly improved, but in the end may not prove satisfactory: one patient had too many complications, and while I have not heard from her, I know she could not have been permanently bene-

TABULAR STATISTICS OF THE TWELVE CASES.

Case.	Sex.	Age.	Strictures. No.	Strictures. Location.	Strictures. Duration.	Cause and Complication.	Result of Previous Treatment.	Result of Electrolysis.	Remarks.
1	F.	24	1	2½ inches.	6 mos.	Venereal, 5 fistulæ.	Dilatation, no success.	Cure.	Post-mortem specimen showed no relapse.
2	"	62	1	4 "	2 yrs.	Constipation, atony.	Medical, no success.	"	No relapse in 10 years.
3	"	30	1	1½ "	5 "	Syphilis, pelvic cellulitis.	Dilatation, proctetomy, etc. Relapse.	"	Remained well as long as heard from for ten years.
4	"	38	1	2½ "	2 "	Hæmorrhoids, constipation.	Operation, relapse.	"	Not heard from.
5	"	36	4	2, 3, 5¼, 10.	5 "	Syphilis, malaria, tuberculosis	Dilatation "	Improved.	
6	"	35	3	1¼, 3, 5, in.	10 "	Constipation.	Proctetomy repeated, relapse.	"	Proctetomy; afterwards had to use rectal bougie; died Oct., '88.
7	"	43	2	5, 10 inches	3 "	Membranous enteritis.		Cure.	Heard from no relapse for 3 yrs.
8	M.	23	1	3¾ "	1 "	Dysentery, suspected malignancy.		Improved.	Heard of recently; is not worse.
9	F.	46	1	1½ "	10 "	Hæmorrhoids, fissure.	Proctetomy, operat'n, relapse	Cure.	" " " no relapse in 1 yr.
10	"	44	2	3, 5 "	20 "	Hæmorrhoids, constipation.	Operation, relapse	"	" " " " " "
11	M.	26	1	4 "	1 "	Dysentery proctitis, prolapsus, constipation.	Medical.	"	" " " " " "
12	F.	30	1	2½ "	3 "	Tumor of uncertain nature.		"	" " " " " "

fited; the second was an aggravated case, and the patient too poor to attend to herself, or even to come regularly for treatment. This case was then operated upon, and she had to use a rectal bougie regularly, by which means she kept the stricture from closing up again; but after four years had a relapse with complications and finally died. The improvement in the third case, No. 8, has been graciously acknowledged by several surgical authorities; however, the patient had to leave the city, thereby interrupting the treatment, and a papillamatous growth, which by some was considered cancerous, complicated the case to such a degree that a cure could scarcely be expected under any treatment. These cases are given just as they were, without claiming any success. The remaining nine cases, however, were cured by the electrolytic treatment, and as far as known no relapse had taken place, which were from one to ten years respectively; except one case in which nothing has been heard from.

The best results were achieved from the same method as used in treatment of urethral strictures by electrolysis, that means by metal bulbs, as negative, weak currents in intervals. But it is in the nature of the parts treated upon, that the current can be applied stronger and oftener than in the urethra. While in the urethra, a current of five milliampères is strong, we may increase in the rectum the current to fifteen and sometimes to twenty milliampères, we may prolong a séance from ten to thirty minutes, and repeat it in four days. Stronger currents and the treatment by needles have not proven as successful in my hands.

I hope not to be called too sanguine or an enthusiast, when I come to the following conclusions:

1. Electrolysis in the treatment of stricture of the rectum is not a panacea, on the contrary failures may happen; and probably will ultimately fail if the stricture is due to carcinoma.

2. Electrolysis will give improvement to the rectal stricture, when all other means have failed.

3. Electrolysis will cure a certain percentage of cases, without relapse, better than other modes of treatment, and without the necessity of an after-treatment or using bougies.

4. The best chances for a cure are with the fibrous inflammatory strictures.

5. The best mode of treatment is by a metallic bulb as negative, weak currents and intervals of four days to two weeks. (Further experience in time may change this rule.)

With these conclusions, I recommend electrolysis in the treatment of rectal stricture to the kind consideration of the profession.

68 W. 36th St., New York, June, 1889.

THE ORIGIN OF BONE AND JOINT SUPPURATION.

BEING A DISCUSSION OF THESIS NO. XXIX, "THE MOST FREQUENT CAUSE OF EITHER[1] IS TRAUMATISM," HELD BEFORE THE ST. LOUIS ACADEMY OF MEDICINE.

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Prior to the bacteriological era, the existence of bone and joint disease was ascribed to either scrofula, struma or traumatism. The exponents of the latter based their etiological views, as they do to-day, upon clinical facts and the results of a methodical, yet purely mechanical treatment. The former view owed its prolonged existence to the seeming ridiculousness of ascribing so much responsibility to an injury, ofttimes of apparent harmlessness. Indeed an eminent satisfaction seized them, when the oft repeated question was asked: If as you contend a seeming slight traumatism should produce such dire results, why is it disintegration of bones and joints follows so rarely upon a dislocation or a fracture? This very sophistical question, often determined the views of the majority, and hence the growth of opinion

[1] The Differential Pathology and Diagnosis of Peristitis, Ostitis Osteomyelitis, by Drs. Lous Bauer and E. M. Powers.

in favor of the traumatic origin of these pathological conditions has been slow. A calm, logical consideration of the question can not but one result. The tendency of all injuries to the body is towards repair, provided the *vis medicatrix naturæ* is aided by the skilful assistance of the physician *in proper time*, and provided: the *vis medicatrix naturæ* is not modified in its activity by an inherent or imposed defect. Nor must this *inherent* or *imposed defect* be hypothetical, but must be proven by indisputable clinical evidence. Therefore hereditary influences must be *established* by the positive history of the family, and the imposed influence must be shown, not by the theory of *locus minoris resistentiæ* as a selective spot for mycotic elements to germinate and destroy. But, it must be established how these mycotic elements *secure* entrance into a healthy body, and await an injury to establish their disintegrating properties. And, we may safely assert, that the presence of bacteria or microbes of greater or lesser virulence in the circulating medium of the body, is in *itself* not sufficient to establish their activity upon a traumatism. In other words, like Darwin's missing link, "there is something wanting" to render such a position irrefutable.

Before discussing the latter proposition, I will have to revert to the simple differences between a traumatised bone and joint and a fracture or a dislocation. In the former the injury is noticeable but a moment, and becomes prominent only when the persistent violation of Nature's laws intensifies the original assault. In the latter, pain and physical defect is serious, and the physician is called at once to relieve it and place it in a position for Nature's reparative process. I will admit that this explanation must perforce be modified, if we take into consideration a few distinctive lesions that follow a badly set fracture and an unreduced dislocation. But, if it modifies the theory of traumatism, it certainly disestablishes the microbic view of *locus minoris resistentiæ*.

Prof. Dr. F. Rinne, of the Pathological Department of the University of Greifswald, has just concluded an excellent article in the *Archiv. für Klinische Chirurgie*, which embodies the detail of a large number of crucial experiments with reference to the subject under discussion, which in my opinion forever sets at rest the theory that there is a *locus minoris resistentiæ* for pathogenic microbes circulating in the blood.

Before, however, referring to his theses and the experiments which elucidate them, it may be well to cite an important case, which in a clinical sense adds strength to his position. For if this case shows anything, it demonstrates Mr. Hilton's proposition that, "Rest is the necessary antecedent to the healthy accomplishment of both repair and growth;" or as my friend, Dr. Bernays, aptly puts it, "The fact that growth and repair bear an exactly proportionate relation to physiological rest, local as well as general, is certainly the natural suggestion of a means towards an end, which should ever be kept prominently in view by the practitioner of medicine," and he might have added the practitioner of surgery. If the modern view of disease is accepted, the sensible suggestions of both of the gentlemen lose much, if not all of their weight.

Case 1.—P. S., æt. 11, was sent to me by my esteemed friend, Dr. D. W. McKeen of Russell, Kansas. The little fellow fell off his horse two and a half years previously, and soon thereafter presented a protuberance of the dorsal vertebræ. Before the deformity was noticed, he suffered with girdle pains, weakness of the extremities, gradually lost flesh, appetite grew less, in fact he soon presented the symptoms of spondylitis. When I saw him the deformity had made some headway; the bones and environment were painful to pressure and locomotion, locomotion was impeded by a feeling of weakness in the extremities, emaciation was marked, he had a rise of evening temperature; in fact presented the evidences of decided and rapid decay. The right eye bore evidence of specific disease. All sorts of treatment had been applied to no avail. I did not pay much attention to the condition indicated by the ocular change. Upon my suggestion the mother permitted me to take a cast of the spine, so that Bauer's cuirass, could be properly fitted by it. I also advised her of the necessity of her child maintaining *absolute recumbency* for at least six months. Hardly a week elapsed, when a change for the better manifested itself in every respect up to within a few weeks before the expiration of four months maintained in the recumbent posture. During all this time his appetite improved, his complexion became clearer, the pains disappeared. At the time mentioned he was seized with a cough, which soon developed a serious pulmonary complication. Another physician was called in who pronounced it miliary tuberculosis, and gave an unfavorable prognosis. This changed condition was communicated to me and my advice sought. I insisted upon his immediate removal to the city, assuming all the responsibility for the long journey. Upon arrival in the city, and after a careful examination, I diagnosed syphilis of the left lung. My reasons for doing so were first:

1. The history of hereditary syphilis.
2. The absence of irritative symptoms.
3. The *rapid* and *universal* involvement of the left lung.

Stuffing with Nicholson's liquid bread, Catlin's beef, wine and iron, claret, milk, cream, etc., and the systematic application of the inunction treatment sufficed to restore the lung to almost complete vitality, and to stimulate Na-

ture's forces to renewed activity. When he left for home, the little fellow was to all intents and purposes well, and after a short continuance of the inunction he was given the iodide of potassium in ascending doses. When last heard from, "we cannot give him enough to eat." *No symptoms have developed traceable* to the vertebral lesion.

If this case proves anything, it shows that the constitutional vitiation exercised little or no influence upon the spondylitis, but that the enforced rest of the diseased spinal segments was sufficient for the restorative process.

Though our discussion specifically considers osteomyelitis and periostitis, it may not be amiss to include the etiological phases of some joint injuries. For this purpose the following case may be of interest also.

Case 2.—W. J., æt. 22, a lather by trade, whilst trimming a lath with an adze inflicted a perforating wound in the left knee-joint. He paid little or no attention to the injury, though noting that from the moment of the injury synovial fluid exuded from the opening. He continued to walk about though suffering considerable pain. One week after the injury he called at my office, though hardly able to walk. A careful examination noted loss of contour in the injured knee-joint, pain over the entire joint upon point pressure or movement; elevated local and general temperature; pus in considerable quantities oozing from the wound. A probe passed into the wound communicated with the joint. I at once decided to place the joint at rest in the extended position and protect the wound by simply applying some absorbent cotton. This was done and the limb immobilized by plaster of Paris bandage. This was at three o'clock in the afternoon; about 8 P. M. I was hastily summoned to see the patient and found that he was delirious and suffering considerable pain, which I attributed to pressure solely. The plaster of Paris sheath soon relieved the pressure of the bandage and Bauer's gutter splint was substituted from that time to his complete recovery, a period involving two and a half weeks. No antiseptic medication, either internal or external, was prescribed and yet the patient recovered with full use of his joint.

No one will deny at this day that much has been gained by the acceptance of the microbic origin of suppuration as it occurs in bones and joints. And yet, if we examine the citation of cases, where so-called spontaneous suppurations have ensued in previously healthy subjects, where a general infectious disease or infectious center has not existed heretofore, or at the time of the suppuration, we are forced to doubt the exact force of the modern theory. Thus, Bryck (*Langenbeck's Archiv.*, Bd. xv, "Researches as to Resections") suggests a case of femoral dislocation, in which suppuration occurred after repeated attempts at reduction. The patient, 17 years of age, had previously been healthy.

P. Bruns (*Beitrage zur Klin. Chirurgie*, Bd. 1, S. 237ff. "The Torsion Fractures of the Cylindrical Bones") observed two cases of subcutaneous spiral fractures of the femur suppurate. Both patients died from septicæmia. In one there was also a compound fracture of the tibia with a fissure leading into the knee-joint. The knee-joint was filled with blood and air. Both joint and fracture treated antiseptically. Whilst these injuries were attended in the best of manner, the simple fracture of the femur suppurated. In the pus was found numerous cocci, connected often with diplococci and occuring in the chains, and in fresh preparations manifested a trembling movement.

Steinthal ("Suppuration of Simple Fractures," *Deut. Med Wessensch*, 1887, No. 21) describes two cases of simple suppurating fractures observed in the clinic at Heidelberg.

The first case a fracture of the femur in a hitherto healthy man, 28 years of age. From the very beginning he had high fever, and four weeks subsequently an abscess developed at the point of fracture, the pus odorless, suppuration of knee-joint, abscess of forearm, thrombosis of femoral vein in opposite limb and decubitus. Patient died. The second case concerned an old luxation of the caput femoris where efforts of reduction produced a fracture. Prior to that time the patient was always well, fourteen days subsequently fever set in and fluctuation appeared, five weeks afterwards an incision discharged one pint of a stinking grayish, green pus, the necrotic head was removed and the patient recovered.

In this case the patient had suffered from diarrhœa, probably from the presence of ingesta due to bad teeth. Steinthal thought that infection proceeded from diarrhœa. The first patient also had a diarrhœa beginning with the tenth day, but his fever commenced at once. S. believed that the infection proceeded through the lungs. Such a supposed infection in the absence of any expressed data where the poison had entered, inasmuch as there was no cutaneous injury, no erysipelas, nor any other manifest complication renders the speculations of S. very questionable.

It may be asserted that it is ofttimes impossible to determine a small cutaneous abrasion in a tissue swollen and folded by an injury, but as suppuration is so rare as a consequence of subcutaneous injury, we may leave this point untouched.

If we were to consider the respiratory or digestive tracts as points of entrance into the system and apply this supposition to the cases cited, it is difficult to perceive how the infectious material could reach the injured spot, without first affecting the general organism.

Now, Mr. Chairman, we are acquainted with the experiments of Rosenbach and others that suppuration may ensue as a result of an irritant injected subcutaneously, but as several gentlemen of the Academy do not consider the test a crucial one, I have concluded to present the résumé of Prof. Rinne, as found in his masterly essay and crucial experiments on suppuration and its metastases, and I trust the enthusiasts who look upon the microbes as the essential factor in the suppurative process will peruse it carefully.

"In taking a retrospect of the results of my investigations, we find that a long series of mechanical lesions in which the local presence of pus-cocci existed, has not the power of developing phlegmonous suppurating processes, provided the local injury is protected against the entrance of atmospheric air or oxygen.

"Subcutaneous incisions, even though immediate and concentrated injections of watery mixtures of the staphylococcus aureus and streptococcus were made in the surroundings on the injury, *did not suppurate*.

"Coccus mixtures were prepared by such concentration of pure cultures, that numberless cocci could be observed in one drop by the microscope. Therefore an uncomplicated, fresh subcutaneous wound is not a fertile soil for pyo-cocci in loco. Resorption is as rapid as in normal tissue, too rapid for the cocci to secure time to develop ptomaines, to irritate the tissues and multiply.

"Glass capsules filled with coccus-mixture and intimately grown into the skin is just as harmless, though the capsules are shattered weeks afterwards, and the cocci are permitted to come in contact with the young cicatricial tissue. Even though we then inject into the swollen late cicatrix pus-microbes in water, they are simply absorbed.

"In old cicatrices also containing particles of glass from rupture of glass capsules, cocci are absorbed without producing suppuration, even with intense infiltration and slower absorption. Cicatricial tissue is therefore not *locus minoris resistentiæ* for the pyo-cocci, on account of equal rapidity of absorption of the injected bacteria, as in late injured tissue; at least absorption is not notably retarded.

"The point of difficulty is to determine the power of resistance in injured tissue or in tissue changed by a cicatrix, towards the absorption of pathogenic pus microbes; the more rapid the resorption the less injurious are the bacteria. The active cellular infiltration, as an expression of the reaction of healthy tissue upon a traumatic injury, as it occurs in an encapsulated foreign body—irritation in the sense of Virchow's cellular pathology—exerts no predisposition for the development of bacteria, but is eminently opposed to it, inasmuch as it is Nature's most effective remedy for the successful combat against inimical parasites.

We can therefore present the following: Subcutaneous injuries of a mechanical nature offer no predilection for the development of pus microbes existent *in loco* therein when, 1, the injury stimulates the absorption activity of the tissues; 2, that the mechanical irritation produces a cellular development—two conditions which are to be considered as defensive measures of the healthy organism in the battle of the cells against bacteria (phagocytes, Osler). It follows further, that the tissue lesion, which in this sense produce an inflammatory reaction, is not to be considered as a predisposing factor in the question of metastatic suppuration. But that a mechanical irritant can under certain circumstances produce a predominance of bacterial development, is well demonstrated in the experiments with the woolen threads,[2] that were saturated with the cocci. Nevertheless, this result in a certain sense emphasizes the previous statement; for the character of the suppuration evidences, that the resorptive power of the tissues and the active reparative qualities of cells was demonstrated, nevertheless, these pus microbes have had an opportunity of developing pus; and considering some of our other failures, it is to be explained, that the cocci contained in the meshes of the woolen thread occupied a relatively protected position against resorption and the cells, and experience such a rapid multiplication, that ptomaines may develop in the neighboring tissue before the foreign body is completely encapsuled. But the suppuration cannot develop further, because the active cell proliferation of the surroundings acts as an impenetrable barrier to the onward progress of the bacteria. These succumb gradually and are absorbed, in part by the leucocytes and partly by the pus globules, as shown by the cocci-containing pus globules. The pus corpuscles succumb to fatty degeneration. A mechanical irritation or lesion of the tissues containing pus microbes may suppurate when an irritant foreign body, located in the tissues, gives the cocci an opportunity to develop ptomaines, necessary to the establishment of the suppurative process; that the pus does not take upon itself a phlegmonous character, is explained by the factors shown in the previous experiments, which do not permit the evolution of the pus developing quality of the bacteria to manifest itself; through resorption, the protective cell development and the absence of oxygen, a battle, in fact, in which the bacteria always suffer.

"A further possibility for the origin of local suppuration is to be seen in the character of the manifestations after the application of an irritant, as in the impregnated woolen thread. Let us next consider the question of suppuration by chemical agents and its relation to the presence of bacteria. Inasmuch as ptomaines play such an important

[2] See experiments iv and v, Archiv. f. Klin. Chirurg., Vol. xxxix, No. 2, 1889, pp. 258, 259.

part in the suppurative process, and the importance which certain chemical substances, croton oil, ammoniac, have in the development of suppuration, under certain conditions without the aid of the bacteria, but above all, as they can in a definite concentration render the growth of existent bacteria easier in a fibro-mucous exudation, I consider it necessary to make some experiments to ascertain if a migration of microbes from other parts of the body occurred towards abscesses or inflammatory foci produced by chemical agents. 1. Inflammatory foci were produced in animals, dogs and cats, by injection of different chemical substances, nitrate of silver, lye, ammoniac, croton oil, cadaverin, etc. Immediately thereafter pure cultures of pus microbes were injected, (*a*), subcutaneously in remote parts of the body; (*b*), in the abdominal cavity; (*c*), in the blood current. In not a single case could these injected pyo-cocci be demonstrated in the chemical abscesses. Even in the development of diffused phlegmonous and ichorous centres with multiple decomposition bacteria of different varieties, could the migration of bacteria be determined in chemical abscesses, inflammation foci, if a separation of both points was sufficient. 2. Even though the experiment was reversed, if phlegmons and abscesses were primarily developed, and then chemical suppuration, the result was negative. 3. If, as a result of the chemical irritation, a cutaneous necrosis ensued, a migration of atmospheric bacteria frequently ensued, but a suppurative focus never manifested the presence of those cocci which were incorporated subcutaneously through the circulation or into the abdominal cavity. Simultaneously with croton oil, ammonia, cadaverin, pyococci were injected. In a few cases, intense phlegmons coincidental with a partial necrosis of the skin followed. Here both forms of microbes in large numbers were made evident. But more frequently intense cauterization ensued with diffused necrosis and rapid mummification. As a rule, cocci capable of life could not be demonstrated in these experiments. The migration of injected bacteria could not be determined in the inflammatory focus."

Whilst I believe, Mr. Chairman, the results of the experiments made by Dr. Rinne manifestly prove the position taken by thesis 29, and which I have endeavored to elucidate in the beginning of my remarks, before closing my part of the discussion, I desire to present the following few points which will be of interest: The author says: "From the experiments which I have detailed, I have shown that subcutaneous injuries of tissues with strong lye, nitrate of silver, or any of the other cauterant chemical groups, are not even then a *locus minoris resistentiæ* for pyococci, even though these chemicals in themselves produce suppuration when ammoniac or ptomaines are injected (syringe), they can, 1, produce abscess when injected in intense concentration; 2, they can prepare the soil when bacteria are injected with them; 3, they can render the entrance of bacteria possible when they produce necrosis of the skin, but they cannot open the inflammatory centre to the bacteria of the blood."

Let it be distinctly understood, however, that I do not dispute the possibility of concurrent or antecedent infectious diseases, or rather their causal factors derived from the atmosphere, exerting such a continued and persistent change in the general tissue, that they will create a *locus minoris resistantiæ* after a traumatism, provided this cell proliferation does not ensue. Nor will I deny the influence which the pneumococcus, gonococcus, streptococcus of rheumatism, erysipelococcus, or coccus of diphtheria or typhoid fever may exert upon the general organism and special localities through the agency of the lymph and blood currents. Sonnenschein, Grawitz, Cornil, Bates, E. von Hofman and many others have demonstrated this fact. Latterly Smirnoff, St. Petersburg, 1889, has developed this point in his microscopic examinations of the synovial fluid of the knee and shoulder-joint, taken from patients suffering from infectious diseases such as erysipelas, phlegmons, phthisis, typhus, diphtheria and gonorrhœa. But, though the pathogenic elements typical of these diseases were present in the fluid examined, he does not inform us *what* pathological changes were noted in the articulation from which the synovia was removed.

We must certainly insist that these specific infections must be made out, either by demonstrating their hereditary existence, or development a short period previously, before we can accept the view that these bacteria are responsible for almost all bone and joint suppurations. In order to be scientifically accurate, we must *establish the particular sort* by irrefutable evidence, and not assume upon theoretical statements that the differences in infective liability are to be sought in this peculiar fitness of the tissues for the reception of microörganisms.

Inasmuch, gentlemen, as our discussion refers particularly to the traumatic origin of periosteal or medullary inflammations, permit me to offer a few remarks upon this point.

Thesis No. 1 considers bone with its fibrous envelope an anatomical unit. Its histological study confirms this view. Yet, we know by abundant evidence that under certain circumstances, the osteogenetic properties of either may be exerted independently. It follows from this indisputable fact (subperiosteal resections, subperiosteal removal of individual bones), that the views of Macewen are somewhat overdrawn. Yet if we study its clinical phenomena, we are confronted with the interdependence of the bone proper and the periosteum. Thus, it is simply a matter of time, when a periosteal inflammation will be combined with an osteomyelitis, and *vice*

versa. But, the early interference of the surgeon can and does interfere with this ultimate connection.

Could I offer a better proof of the traumatic origin of periostitis in a large number of cases than the results of treatment? Bryant has placed in bold relief the *influence of tension* on inflammatory affections, and *has demonstrated the immediate relief* of inflammatory phenomena, after such tension has been removed. *We are all acquainted with* the prompt results derived from the surgical treatment of both osteomyelitis and periostitis. *Subcutaneous division of the inflamed periosteum* almost invariably leads to the cessation of the inflammatory process. If this is not done, *suppuration with destruction of bone ensues*. And what have been the results of treatment in osteomyelitis; of malaria; typhoid fever; exposure to damp cold—has not the relief of intra-osseous tension curtailed, even estopped the pathological process! and will the microbists assert that the well-known virulence and power of tissue penetration of bacteria is prevented by allowing the escape of a few drops of pus or blood?

And how do the microbists explain the origin and recurrence of "The Multiple Recurring Bone Inflammation Common to Mother of Pearl Workers," as described by English (*Wiener Med. Presse*, 1869, *Wiener Med. Wochensch.*, 1870) and Gussenbauer (*Archiv. f. Klin. Chirurg.*, Bd. 18, 1875). Will they accept this pathological condition on the basis of the possibility of "pearl dust" being deposited in the pulmonary parenchyma and, after undergoing some changes, are found as small emboli in the osseous vessels. Or will they accept the assumed, and to me far-fetched, microbic view of Dr. J. Decker (*Berl. Klin. Woch.*, November 11, 1889, p. 975), of Munich?

Permit me to close my remarks with the question: Has it been absolutely proven, that microbes are not scavengers merely?

517 Pine Street, St. Louis.

MEDICAL PROGRESS.

The Therapeutical Application of Oxygen.—V. von Gyurkovechky. According to this author, inhalations of oxygen are indicated where there is acute or chronic saturation of the blood with carbolic acid; he also recommends its use for imperfect oxygenation in cases of physical weakness, anæmia, leucæmia, chlorosis, indigestion, enervating nervous diseases, diabetes, hemicrania, sleeplessness, and impotence. The oxygen used must be pure; the quantity to be inhaled depends upon individual peculiarities and the character of the disease, and varies from 10–30 litres per day. Old people require less than the young; the enfeebled less than the strong. The best time for its administration is before breakfast or before the other meals. Accidents have never been observed by the author. Hæmoptysis and aortic aneurism contraindicates its use.—*Cent. für Klin. Med.*

Labor Complicated by an Ovarian Tumor.—In the Gynecological Society of Dresden, Munchmeyer reported the case of a multipara 30 years of age, who was admitted to the hospital during labor. An examination revealed a remarkably high position of the head caused by the presence of a large firm tumor which really filled the true pelvis. Attempts at reposition failed; puncture resulted only in the escape of a little fluid blood, the tumor showing no disposition to diminish in size. After death of the child delivery was accomplished by perforating and using the cranioclost, the latter being introduced through an os dilated only to the size of a dollar. For four weeks after labor the tumor, which was connected with the left ovary, remained unchanged, and then began to decrease in size. Ovariotomy was performed and the tumor found to be a spindle-celled sarcoma of the left ovary. The patient made a good recovery and was discharged in three weeks. The points of interest in this case are the extraordinary swelling of the tumor shortly before labor, and the lack of any special symptoms in spite of its malignant character.—*Cent. für Gyn.*

Treatment of Anthrax by Hypodermic Injections of Carbolic Acid.—Dr. Danet reports four cases of anthrax cured by the hypodermic injection of glyco-phenic acid. The solution was employed in the strength of 3 per cent. of which 4 to 5 cubic centimetres was employed, this amount being injected at several points, and 1 cubic centimetre being introduced through each puncture.—*Journ. de Méd. de-Paris.*

Insolubility of Compessed Tablets.—The case of a boy, æt. 8 years, is reported, in which compressed tablets of antipyrin containing 0.5 grm. each were administered for fever; the tablets passed through the intestinal canal unaltered. In a similar manner compressed tablets of phenacetin containing the same amount were given to a boy of 10 years for neuralgia; these two were discharged undissolved.—*Corres. für Schw. Aerzte.*

Caffein in Adynamia.—Huchard recommends large subcutaneous injections of caffein as a valuable remedy in adynamic conditions particularly as its action, contrary to that of digitalis, is first upon the nervous system and then upon the heart. He employs from 2.0 to 3.0 grm. per day and finds that it can be given with the best results while the benefit of a daily dose of 0.2 to 0.5 grm. is illusory.

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SATURDAY, MAY 17, 1890.

A FUNCTION OF DOGMA.

"You are the most dogmatic man of my acquaintance!" In the course of a heated discussion, not very long ago, this remark was addressed by a distinguished medical man apparently to his opponent. Probably, the words were really aimed at the other members of the Society, with a view to discredit his antagonist, whose argument, possibly from inability, the speaker did not attempt to refute. Plainly the remark is a typical example of the *argumentum ad hominem*, an instance of that material fallacy, recognized by all logicians from ARISTOTLE down to ARCHBISHOP WHATELY, as the irrelevant conclusion. Technically this fallacy is called *ignoratio elenchi*, or literally ignorance of the refutation, and the name indicates clearly its use in sophistry. It is the great resource of those that have to support a weak case. Some lawyers are familiar with it, as in the case of the English attorney for the defendant, who is said to have handed to the barrister his brief marked, "No case; abuse the plaintiff's attorney." Among scientific men, however, honesty is ever at a premium, and all such quirks and quibbles are apt to be promptly detected and condignly punished. Simply on the ground of expediency, therefore, if from no loftier motive, this sophism is seldom employed in medical discussion.

For the purpose of this note, the truth of the allegation in the case cited may be conceded, but the admission does not necessarily discredit the opponent. Dogma—"A peremptory opinion, a formally stated and authoritatively settled doctrine, resting on what is regarded as competent to decide and determine"—plays, has always played, and will continue to play a rôle in the evolution of the science of medicine as essential as that in theology and metaphysics. To be sure the adjective, "dogmatic," is commonly suggestive of the unpleasant notion of positive, overbearing, arrogant assertion, which is fully justified neither by etymology nor by best usage. PROFESSOR C. C. EVERETT, in the December number of *The Forum*, contributes a thoughtful paper on "The Natural History of Dogma," which, while outlining more especially the function of dogma in theology, still is germane to the subject in hand. Most of his conclusions can be applied with but slight modification to the function of dogma in medicine.

The origin of dogma is to be sought first in effort of the mind to arrive at truth, to establish proof. But "proof, by its very nature, implies that which is unproved, and, in the final analysis, that which cannot be proved. An argument which is based on no assumption is as useless, for all purposes of support, as a chain that is fixed to no staple. If we prove the assumption upon which any one line of reasoning rests, it must be because we have found another behind it. An endless chain of reasoning, that is, one that is all links with no fixed point anywhere, is an idle dream." In the same strain, HUXLEY has said that every science must proceed with the enlightened conviction that ultimate fixity of conception is here unattainable.

"Further, in very few cases do any of us go back to the primary assumptions of the mind. Our belief, in most cases, rests upon such ready-made assumptions as our social environment offers us." These assumptions and inherited methods of thought constitute what Professor Everett calls "the irrational activity of the mind," and thus imply a dependence upon the past, that some of the moderns are disposed to resent. This resentment, of course, is all the more unreasonable since "the fact that every age has a set of more or less definite opinions and presumptions ready for its children, is" the condition that "makes progress possible."

The second factor in the origin of dogma is the "strictly rational activity" of the mind. "Human reason is unwilling to let anything rest in its separateness. It is fundamentally a systematizer. It will see everything in relation to every-

thing else. Thought tends to globe itself, no less than a drop of quicksilver. Any thought that is introduced into the mind seeks to find or to make a place for itself. If it can do neither, it passes away, leaving no impress from its brief presence."

Conditioned thus in development, it is obvious that the "same influences which produced" dogmas tend at last to bring about their dissolution. Of course we must except those cases in which the doctrines, passing the limits of probable evidence, ultimately obtain a basis upon facts capable of objective demonstration. Fortunately such instances in the history of medicine are not uncommon, and they are daily increasing in number. To follow Prof. Everett's plan, to illustrate and to apply these general principles, no more striking example could be selected than the doctrine of the infectious wound diseases.

At the present time, and especially in our own country, it appears to us, there exists a tendency, more manifest in some departments than in others, to "count it a bondage to fix a belief, affecting free will in thinking as well as in acting; and though the sects of philosophers of that kind be gone, yet there remain certain discoursing wits which are of the same veins, though there be not so much blood in them as was in those of the ancients."

This tendency plainly indicates a neglect to employ "the strictly rational activity of the mind" which, we have seen, constitutes such an important function of dogma. Take, for example, the doctrines of "eclampsia" and of "placenta prævia," the two most fearful complications of gestation, as presented in our text-books and journal literature. We venture the assertion, without fear of contradiction, that the accounts of the pathology and treatment of these two conditions in our text-books and journal literature are inadequate, and that they reflect inaccurately the world's actual stock of knowledge. The cause of this tendency, we think, does not consist so much in "a natural, though corrupt love of the lie itself," for, as before remarked, medical men are honest, if anything; but, rather, in the "difficulty and labor" which men must needs take in finding out the truth. No one will deny that medical men are sometimes lazy when it comes to reading, study and reflection. Possibly also the second-hand character of our information, derived, as it is for the most part, from German sources, may be at the root of this unwholesome agnosticism, that is destitute of all power and virility.

A MUNIFICENT PROPOSAL.

At the annual meeting of the Illinois State Medical Society, held in Chicago May 6–9, 1890, Mr. Wm. F. Poole, Librarian, representing the trustees of the Newberry Library, was introduced to the audience, and in a short and effective address, expressed the purpose of the trustees, with reference to a medical library.

In the construction af the library building one Section will be devoted exclusively to medicine. It is their intention to place in that department a library so complete as to meet, as far as possible, the wants of all who wish to consult medical authorities. They will also keep constantly on file, as they are issued, the current numbers of all prominent medical journals published in this, and in foreign countries.

They invite the members of the Society to suggest the names of any books, or series of books, that they may deem desirable, and, as far as practicable, such additions to the library will be made. In short, it is their purpose to develop a Reference Library so complete that whatever authorities medical men may desire to consult they may here be found.

When it is remembered that this institution has at command two millions of dollars, and that as trustees superior men could not be named, and that it commands a librarian of world-wide reputation, it is at once apparent that its trustees could pay to the medical profession no higher compliment. The City of the Lakes is unspeakably fortunate, in that it will thus be able to furnish to the profession a library which can, to the utmost, supply the needs of literary and scientific workers in every department of medical investigation. Private reading rooms and every facility for reference will be afforded free of charge.

THE INSANE POOR AS A STATE CHARGE.

The New York State enactment regarding pauper lunatics has recently been signed by the Governor, and will probably greatly ameliorate the condition of those insane persons who have hitherto been regarded as county charges, and whose treatment has been practically the same as

that given to paupers. The effects of the bill will be, first, to establish the policy of State care and State support for all the insane who are, or who may hereafter, become a public charge; second, that it destroys the pernicious legal discrimination between the chronic and acute insane, and third, that it provides for the removal of all the insane from the county poorhouses, and forbids their detention in these places when the State shall have made accommodations large enough to take them all in. For the present, the State hospitals for the insane will not be sufficient for all the county charges, and must be enlarged at once. This humane law has been beaten three times before, but each year it showed a greater and greater strength until the present session, when its opponents were able to make only a show of resistance to its adoption.

THE ANTISEPTIC TIN DRESSING FOR CHRONIC ULCERS OF THE LEG.

The last report of the Boston City Hospital contains an account of the tin dressing for ulcers of the leg, used by DR. FRANCIS S. WATSON, at that institution. The ulcer and surrounding surface are soaked in a solution of corrosive sublimate, one part to 4,000, for ten to fifteen minutes. The surface about the ulcer is then dried and thoroughly cleansed, the ulcer itself being lightly dusted with calomel or iodoform. A piece of protective of Mackintosh cloth is then cut out, of the shape of the ulcer, and in size a little larger, covering a little more than the surface of the ulcer. Next a piece of sheet-tin is cut to the shape and size of the ulcer, and bent to fit smoothly the curve and contour of the leg at this point. This is laid over the protective after that has been laid on the ulcer with as smooth a surface as possible, in order that, when the time comes to change the dressing, it can be lifted off without tearing up the newly formed tissues beneath it. Over the tin is placed a square of sterilized or sublimated gauze, dry, and outside of this a larger square of antiseptic gauze of some kind, enveloping the leg; then the whole is held in place by a bandage extending from the toes to the knee.

PROF. THEIRSCH, of Leipzig, has been chosen President of the next Congress of German Physicians.

EDITORIAL NOTES.

HOME.

THE NEXT PLACE OF MEETING.—Several cities were named at the last annual meeting, each of which seemed a desirable one for a meeting of the Association. Within the last few weeks there has been a strong movement on the part of our Omaha friends to secure the meeting of 1891 in that city. With reference to accommodations we are confident that the citizens of Omaha and Council Bluffs, in a combined effort, would be able to meet every requirement in a right royal manner. But the question of location is the one to be more seriously considered. Will the Pacific States be more fully represented at Omaha than at some prominent point farther east? If not—secondly, will the distance be a bar to a full attendance of delegates from the Atlantic, the Eastern-Middle, and the Southern States? If so the location would be unfortunate, not as to matters of entertainment but as regards the number in attendance. The place in which the most physicians will congregate is the desirable location for our next meeting.

ILLINOIS STATE MEDICAL SOCIETY.—The officers elected for the ensuing year are as follows: President, J. P. Mathews, Carlinville; First Vice-President, C. C. Hunt, Dixon; Second Vice-President, F. C. Schaefer, Chicago; Treasurer, T. McIlvane, Peoria; Assistant Secretary, George N. Kreider, Springfield. The next annual meeting will be held in Springfield, commencing the third Tuesday in May, 1891.

A NEW HOSPITAL is to be built and maintained in Sioux City, Iowa. Thus, one by one, our Western States are taking active measures to meet the sanitary needs of their rapidly growing populations.

SCIENTIFIC ACHIEVEMENTS.—A high order of talent combined with special culture is absolutely essential to the proper development of the scientific questions which present themselves for investigation at the present hour and in the immediate future. The field of microscopy, comparatively new, presents its claims with imperative demands. In the lines of microscopic investigations there seems hardly to be a limit to the possibility of new achievements as signal as those already attained, and, doubtless, more so. In the application of electricity as a therapeutic agent

we are as yet but in the beginning of our investigations, and the successes already attained forbid that we should rest content with what is known only in part. The application of electricity in phonography is not a curiosity merely, but is already a marvel of utility. Not only may the utterances of men be treasured up for future uses, but the vocal intonations with which they were delivered are to be preserved as well. In the meeting of the Association to be held at Nashville one of the Addresses in the Section on Medicine has already been recorded upon a little cylinder, and will be reproduced as audible as when first delivered, the author himself being a thousand miles away.

The Chicago Medical College.—In connection with the Illinois College of Pharmacy the Chicago Medical College, the Medical Department of the Northwestern University, is making active preparations for the erection of new and commodious buildings, which shall afford to each of the institutions thus associated increased facilities for instruction. Desirable lots have already been secured on the corner of Twenty-fifth and Dearborn streets, and the work of construction will be pushed rapidly forward to completion.

Annual Reports of the Illinois State Board of Health.—Licentiates of the Board can obtain copies of the Ninth and Tenth Annual Reports, also the Report on Medical Education and Medical Colleges, by applying to the Secretary, John H. Rauch, M.D., Springfield, Ill.

The Association and the Pacific Coast.—We are advised that Dr. Winslow Anderson, Editor and Publisher of the *Pacific Medical Journal*, who is a delegate from his State to the meeting of the Association at Nashville, is instructed by the State Medical Society of California to present its compliments to the Association and to urge that the next annual meeting be held in the City of San Francisco. That city has now a population of over three hundred thousand people, with over three hundred physicians in active practice in affiliation with the Association.

The contiguous States and Territories of Washington, Oregon, Nevada and Arizona are representative of over three thousand physicians, and it is confidently represented that from twelve to fifteen hundred of them would be in attendance from the coast alone. The Association, National in its character, should be National in its outreaching, and it owes to California the acceptance of such a generous invitation in the near future. Perhaps the fitting time for acceptance is now!

Leprosy.—A single case of leprosy is reported in Mississippi. The State Board of Health will doubtless give the case their especial attention.

FOREIGN.

Death-Rate and Mortality of Infants in Japan.—A correspondent of the *British Medical Journal* says that the death-rate of the population of the whole Empire, as gathered from the well edited reports of Mr. N. Sensai, the able chief of the statistical health bureau, is 19.33 per 1,000, due to the low infant mortality. The Japanese have the most tender affection for their children; and all travelers are agreed that next to the beauty of the scenery and the gentle and graceful courtesy of all classes of the population, ranks as among the most pleasurable incidents of sojourn in Japan, the universal love of children and the amiable gaiety with which their pleasures are studied.

At the Surgical Congress recently held at Berlin, it was announced that the German Emperor had contributed 100,000 marks (£5,000) towards the new Langenbeck Institution, which is to be the general home of the medical societies of the Prussian capital.

The Pneumatoscope.—At the meeting of the Vienna Medical Society on February 26, Dr. Gabritschewski, a Privat Docent, of Moscow, exhibited an instrument invented by himself called a pneumatoscope. It consists of two funnels inverted into each other, and two tubes provided with two end-pieces which the examining physician applies to his ears. The inverted funnel is covered with a light vibrating membrane of india-rubber, and is placed on the patient's mouth so that he breaths into it. According to the inventor his discovery will effect a revolution in thoracic examinations. He has used it very successfully in the diagnosis of chest affections. The sound-waves permit a more accurate differential diagnosis as different breath-tones were produced in the different diseases. The instrument can also be made use of in examining the breast.

TOPICS OF THE WEEK.

MEDICAL VIEW OF DRUNKENNESS.

A very interesting and important question was discussed the other evening at a meeting of the Police Surgeons' Association held at St. Thomas' Hospital, Mr. Mellwraith having called their attention to the difficulty of defining the condition indicated by the term "drunkenness," and the uncertainty as to a man's responsibility for actions committed while drunk. Strangely enough, the question was represented, even by an intelligent public writer, as a semi-comic one. It is far from comic, as no one knows better than a police surgeon. No one sees so much as he of the infinite complications which beset cases in which injury, exhaustion, and disease are mixed up with alcoholic poisoning in its various grades, so as sometimes to baffle all ordinary powers of diagnosis. But apart from these more difficult cases (which, however, are of very common occurrence), the everyday question for the police, "When is a man to be called drunk?" is one which becomes the more puzzling the more it is studied, and it is one which recent police legislation has made it incumbent on medical men to answer, since now everyone charged at a metropolitan police station with being "drunk and disorderly" has a right to summon a medical man to pronounce on his sobriety; and of course in all cases where there is any reason to believe that a person is seriously ill, whether he be thought to be drunk or no, medical aid is at once summoned to decide the question. There seems to be no particular reason for making the mere question of sobriety a medical one, since no definition of drunkenness appears to have been attempted by writers on medical jurisprudence; but, since it has been so ordered by the authorities, it behoves the surgeons called by the police to have as clear ideas on the subject as circumstances permit. To this end, as it seems to us, the recent discussion will very materially contribute, and we would call especial attention to the following very practical and useful observations of one of the divisional surgeons.

Dr. Forsyth said "the term 'drunk' was applied to any case in which alcohol was supposed to be a factor, and he thought it was necessary that they should differentiate between the various states. He objected to the indefinite expression being so easily used and so easily accepted, and urged that drunkenness should be treated under at least three aspects—excitement, loss of control, and coma, and that in all cases where persons were charged with being drunk the magistrate should require a qualifying definition to be given, and should also demand the reasons of those making the charge for attributing the condition of the prisoner to alcohol. He would also insist upon a man who was unconscious from drink being in all cases treated as being in as great danger as an apoplectic patient, for one was in as great danger as the other. If this were done, the heading 'Drunk or Dying' would disappear from the newspaper reports."

It is obviously in some such rational discrimination of the various conditions produced by alcohol, as is here indicated, that safety is to be found for the liberties and lives of persons who are, or who are suspected of being, "drunk," and we congratulate the police surgeons on having taken up so interesting and so important a subject, and of having treated it in a way so likely to result in benefit to the public. Other useful remarks on diagnosis were made during the discussion, such as the following by Mr. Phillips:

Dealing with the tests for drunkenness, he pointed out that "when the brain was poisoned by alcohol the pupils of both eyes were contracted alike, whereas in apoplexy it was noted in one or the other according as the effusion of blood affected one portion or another of the brain."

The Association is one capable of rendering much service to medical science, for many interesting points are copiously illustrated in police practice, which but rarely come before the general practitioner, and we are therefore glad to see that they are likely to be treated wisely and usefully by the newly formed Society.—Editorial, *Brit. Med. Jour.*

"COLLES' LAW."

One of the most important of all pathological facts is the transmission of syphilis from father to child without infection of the mother. Many men aware of this fact, and already victims of syphilis, hesitate to marry, almost entirely on account of their future offspring rather than their future wives. The extinction of syphilitic virus in well-fed patients is one reason why the disease is not often seen in its hereditary form in children among the prosperous classes of society, as Paget has had occasion to observe. The immunity of the mother is a question which deserves the closest investigation. According to a well-known law first laid down by Colles, and afterwards confirmed by Baumès, a mother who suckles her syphilitic child never thereby acquires syphilis. Diday, Jonathan Hutchinson, and others have established this law; and the exceptions are so few as almost to prove the rule, if not themselves "suspect." Dr. L. Merz has published notes of two exceptions in the *Archives de Tocologie* for January. He notes two cases where the law was strikingly confirmed. In one, the child of a syphilitic father was suckled for three months by its mother. As it then was covered with a specific eruption, the mother, believing her milk to be bad, employed a wet nurse. The latter became infected within six weeks, an indurated chancre appearing on one nipple. The mother remained healthy.

The first exception to Colles' law was noted by Tommasi-Crudeli in the *Instituzioni di Anatomia Patologica*. Turin, 1882.

In the second case, under the observation of Dr. L. Merz himself, the father was clearly syphilitic, and the mother free from venereal disease when a child was born. She suckled her infant, which soon showed unmistakable signs of congenital syphilis, mucous patches appearing on the lips. The mother as well as the child was submitted to specific treatment. Nevertheless a chancre formed on a fissure in the left nipple, and it was followed by roseola, mucous patches on the buccal mucous membrane, and alopecia. The supply of milk did not fail, and the mother was able to suckle the child. Both

made a good recovery. Dr. Merz attempts to explain Colles' law and its exceptions. The law, he believes, is based on the fact that the mother is generally inoculated by her unborn child. The degree of inoculation may, however, vary. In most cases it is subtle, yet so thorough as to guarantee the mother both against that severe yet chronic train of symptoms which constitute syphilis, and against infection through her child at the breast. In some cases it is sufficiently severe to infect the mother during pregnancy, as has been repeatedly observed. Lastly the infection, instead of being severe or medium, may be insufficient. The mother is not protected against infection during lactation. This would account for such cases as that reported by Dr. Merz. Immunity through soundness of the nipple or healthiness of the infant's mouth could never explain Colles' law; for sore nipple is a very common disorder, the mouth is very often attacked in congenital syphilis, and in cases where the law is proven it is the nipple of the wet nurse that is usually the seat of the chancre.—*British Med. Journal.*

THE DURATION OF PREGNANCY.

The science of obstetrics is remarkable for the real complexity of some of its most essential problems, which all at first sight bear the stamp of simplicity. We find men of experience mistaking a gravid uterus for a tumor. Very recently several obstetrical veterans publicly declared at a meeting of a London society that the position of the placenta could be diagnosed by palpation, upon which some other obstetricians of equal authority declared that it was impossible to ascertain the position of the placenta by palpation. Another subject of high interest to men and women in general is the precise time within the menstrual cycle at which impregnation is most probable, some writers implying, or laying down, a physico-ethical law that impregnation is natural only at that precise time. Closely associated with this subject is another question, the duration of pregnancy. The theme is treated with ability by Dr. A. R. Graham in a short but important contribution to the new volume of the "St. Bartholomew's Hospital Reports." His figures tend to show that considerably more labors occur in fewer than in more than 280 days from the cessation of menstruation, but that over 300 days is not a rarely recorded period. He can find no direct confirmation of the view that the length of the pregnancy depends partly upon the sex of the fœtus. Dr. Graham's observations on the time in relation to the period at which pregnancy commonly commences, deserve the attention of obstetricians and practitioners.

STATE MEDICINE IN ITALY.

Important innovations have just taken effect in Italy for the official surveillance and control of medical institutions and health resorts. Every prefect throughout the peninsula has received from the Government a circular, in which he is authorized to permit the opening of any medico-chirurgical infirmary, maternity hospital, or hydropathic or thermal establishment, only on condition that his sanction has first been asked and obtained. The object of Government in enforcing this regulation is to secure a guarantee in which the public can have confidence that these institutions, whether already established or recently set on foot, correspond exactly to their avowed purpose and are justly chargeable with no defect in their hygienic condition or administration. Another salutary innovation is the practical examination and certifying of professed midwives in town and country. In any centre of population, rural or urban, in which these functionaries are found inadequate, in point of qualification or of number, to the service of the community, the Government shall at once, through the local sanitary authority, take steps to make good the defect.

MUSCULAR ATROPHY IN TABES DORSALIS.

Dejerine (*Revue de Médecine*, 1889) has made an elaborate study of those forms of muscular wasting which accompany tabes dorsalis. Wasting is most common in the hands and feet. The interossei are the most affected, and that gives either the foot or the hand a claw-like aspect. Atrophy of other muscles leads later to pes equinus or pes equino-varus. Contraction of the muscles may lead to a loss of the capability for passive movement. The muscular atrophy is almost always symmetrical on the two sides of the body. There are no changes in the anterior cornual cells, but the nerves to the muscles are degenerated. The degeneration is most marked nearest to the muscle, and gradually decreases in intensity as it is traced upwards; only occasionally does it reach as far as the anterior nerve roots. The muscular fibres are simply atrophied without any increase of interstitial tissue.

NEW METHOD OF EXAMINING NERVOUS TISSUES IN THE FRESH STATE.

Kronthal (*Neurologisches Centralblatt*, No. 2, 1890) has described a method for examining in a fresh state the microscopical characters of the central nervous system. A piece—about as big as a pin's head—of brain or spinal cord, as the case may be, should be taken quite fresh and placed upon the object-glass. It is then covered with a cover-glass and pressed out flat. A drop of a 0.5 per cent. solution of methyl blue is placed at the edge of the cover-glass, which is raised to let the stain run in. After from thirty seconds to a minute the superfluous stain is removed with blotting-paper. The cover-glass is then raised. The preparation is allowed to dry in the air; this takes five or ten minutes. A drop of Canada balsam is then added, and the preparation is ready for examination.—*British Medical Journal.*

AN ALBUM FOR PASTEUR.

The *Semaine Médicale* reports that a committee, composed of British and American notabilities, has been formed to offer an album to M. Pasteur. The first page of this album bears, in French, under the signature of the Princess of Wales, the following inscription: "To the Great Monsieur Pasteur, the Benefactor of the human race."

SOCIETY PROCEEDINGS.

The Illinois State Medical Society.

Fortieth Annual Meeting held in Chicago, Illinois, May 6, 7, and 8, 1890.

FIRST DAY—MORNING SESSION.

THE PRESIDENT, DR. JOHN WRIGHT, OF CLINTON, IN THE CHAIR.

The Address of Welcome in behalf of the local profession was delivered by Dr. Norman Bridge, the response to which was made by Dr. T. J. Pitner, of Jacksonville.

DR. C. W. EARL, of Chicago, then presented the report of the Committee of Arrangements, which was a very elaborate and attractive one.

DR. J. M. G. CARTER, of Waukegan, Chairman of the Committee on the Practice of Medicine, read a paper on

THE CAUSES AND TREATMENT OF PNEUMONIA,

in which he said the question of etiology has given rise to considerable discussion, and in many minds, to doubt. Six different varieties of bacteria had been mentioned by Brenmer as causing this disease, and others had been mentioned by later writers. The diplococcus of Fränkel had lately been shown to be present in most cases of pneumonia, especially croupous pneumonia. Wolff found it in 94 per cent. of the cases examined by him. Baumgarten thinks it is safe to assume a single sole cause for pneumonia. In Wolff's cases verification was established by cultures in more than half the cases. Monti examined the exuded fluid in twenty cases with but one negative result. Sometimes the Fränkel diplococcus was found in company with other bacteria. In these cases of Monti, Friedländer's micrococcus was not seen. Inoculation of fifty-nine rabbits, while universally successful, produced typical pneumonia only when the sputum was introduced into the trachea. Inoculation under the skin produced septicæmia; into the pleura, pleurisy; into the pericardium, pericarditis. Inoculation of the dura mater of a dog produced meningitis and lobar pneumonia. Fränkel, Foa, Whittaker and others have shown that the cause of pneumonia is not confined to the lungs, but invades other organs and tissues. Weichselbaum, Netter, Mircoli and others, have found the diplococcus after pneumonia in the ventricles of the brain, connective tissue of the mediastinum, the jugulum, above the clavicle, behind the œsophagus, in cavities about the nose, in the drum cavity and labyrinth of the ear. Tomasi, Golgi and others believe pneumonia to be caused sometimes by malarial poison, and this view corresponds with that of physicians in the southern part of Illinois and other malarial districts in the United States, where this form of the disease is called "winter fever."

Dr. Carter said it must be admitted that the cause of pneumonia is not fully settled by the profession. It has not been proved that the bacillus is not a concomitant rather than a cause of the disease.

In the present state of our knowledge, the following indications for the treatment are clear: 1. To equalize the circulation and diminish the determination of blood to the lungs. 2. To reduce the temperature of the body. 3. To sustain the patient's strength. 4. To assist the mucous membranes and organs of secretion and excretion in the performance of their functions. 5. To allay pain. Petresco says digitalis may check pneumonia at the outset. It is of value in æsthenic cases and when the heart is weak. Dr. Carter had not been favorably impressed with antipyrin, nor with antifebrin, and of late had not given them. Quinine is usually serviceable, and in malarial cases, essential, not only to reduce temperature, but also as a germicide and antiperiodic. Liebermeister advises blood-letting when there is œdema of the lungs, but Dr. Carter believes this may be avoided by blistering and the use of digitalis. Bruckner has reported over seventy cases treated with tartar emetic with great success.

Dr. Carter regretted that there is no well appointed laboratory for microscopical and physiological research in Chicago.

DR. G. FRANK LYDSTON, of Chicago, read a volunteer paper entitled

THE RELATION OF EVOLUTION TO THE PROBLEM OF INFECTIOUS DISEASES.

He said much of the medical progress for several decades past has consisted in the isolation and differentiation of contagious diseases, and their classification as specific entities. Dr. G. DeGorrequer Griffith, of London, England, published, several years ago, a theory of the unity of poison, which implied that certain contagious diseases were identical in origin, and that their poisons could be developed through certain changes, of a chemical character, occurring in organic matter. Thus he recognizes two forms of scarlatina: (1) That contracted from a scarlatina patient, or through the medium of something that has been in contact or in communication with him; (2) that which has generated *de novo* from blood poison, such as occurs in puerperal patients and in surgical cases (the "surgical scarlatina" of Paget), from deleterious matters absorbed or otherwise passed into the blood and thence into the tissues of the body; or from noxious drains and sewers, or the ingestion of pernicious articles of drink or food, such as tainted water, milk, cream, decomposing animal or vegetable substances. We have by evolution the spontaneous

generation of so-called specific poisons. Dr. Lydston does not hold that the germs themselves are spontaneously developed, for while such an event is perhaps possible, it is as yet disputed by the best scientific authorities. He claims that the poison of disease may be developed by the evolution and acquirement of new and toxic properties by germs which were primarily innocuous.

The local venereal diseases, and in this category he included not only gonorrhœa and chancroid, but their congeners, such as herpes, balanitis, simple urethritis, etc., are among the best illustrations that we have of the poisons of infectious disease. The idea that gonorrhœa and chancroid are diseases which have been inseparable from the human species is certainly untenable. The origin of gonorrhœa and chancroid must necessarily be the same, if the evolutionary theory of their origin be correct.

The conditions which modify the results of the virus generated *de novo* in the human vagina are: (1) The age of the decomposition; (2) the degree of inflammation present; (3) the frequency of coitus; (4) the character of any semen or urethral discharges which may be deposited in the vagina; (5) the degree of cleanliness of the woman; (6) amount and degree of virulency of the virus deposited upon the absorbent surface in another individual; (7) the cleanliness, local and constitutional condition, habits and sexual hygiene of the recipient of the cultivated virus; (8) individual predisposition.

Afternoon Session.

Dr. W. O. Ensign, of Rutland, as soon as the Society had reconvened, took the chair, and President Wright proceeded to deliver his annual address, in which he advised the formation of country and district medical societies, and the coöperation of physicians throughout the State.

Dr. Wright then attacked the liquor traffic, and said that the State Board of Health should revoke the certificate of every physician known to use alcoholic liquor as a beverage.

Dr. J. H. Wallace, of Monmouth, contributed a paper entitled

diagnosis of typhoid fever,

in which he first protested against the common custom of calling all cases of continued fever typhoid. To be of practical importance to the patient our diagnosis must be based on the careful study and examination of the symptoms presented during life, and not on the phenomena observed after death. There are certain symptoms in common in all cases of typhoid fever. Thus, Dr. N. S. Davis says: "In classing all cases of continued fever under the head of typhoid and typhus physicians ignore some of the plainest facts of clinical experience, and place in the same group cases essentially different in causation, symptoms and pathological results. It remains, therefore, for us to detect minute differences."

The onset in typhoid fever, continued Dr. Wallace, is more gradual than that of any other fever, coming on insidiously and with premonitory symptoms. There is not that uniformity in the origin of typhoid fever which is found in intermittent, remittent and yellow fevers, where we can give name to the cause and study the law of its diffusion. Cases of typhoid are met with at all seasons of the year, in all climates and in all portions of the habitable globe, and amongst all varieties and nationalities of people. Two things are necessary to bring about a case of typhoid fever: (1) The poison; (2) the person liable to be poisoned. In all cases of suspicious typhoid fever an examination of the urine should be made, as Bright's disease, abscess of the kidneys, with blood poisoning, occasions a deceptive likeness to typhoid fever. Wilson says that the most marked changes in the secretions from the kidneys is found to be interstitial or diffuse nephritis, probably of septic origin. Dunn regards our present knowledge inadequate to the solution of the question as to the part played by microörganic ferments in the causation of the disease. One of Da Costa's diagnostic indications is the duration of the fever, he asserting that it lasts fully three weeks, and very frequently much longer.

The next thing in order was the report of the Special Committee on Diseases of Children.

Dr. Katharine Miller, of Lincoln, read a paper on

vaginal irritation as a cause of bladder symptoms in young girls.

More common even than enuresis among girls is a form of irritability of the bladder manifesting itself chiefly in an inability to retain the urine in a normal manner. It is often complained of in school-girls, who are obliged to leave the schoolroom even between intermissions in order to pass the urine, else the bladder, spasmodically contracting, empties itself in spite of every effort of restraint. Even with the promptest attention to its demands these girls are occasionally subjected to the mortification of wetting their clothing. Oftentimes no complaint is made of any other symptom than this annoying vesical irritability. The condition is more common at the age of 6 to 12 or 14 years, but may, if untreated, persist indefinitely. Examination reveals an extremely sensitive and hyperæmic condition about the vaginal orifice, and further investigation will show the extension of this tenderness within the vagina. Often this latter investigation can only be made by the use of an anæsthetic, not only because of the small size of the parts, but because of their extreme sensitiveness. Whatever the cause, the treatment must be directed to the removal of the vaginitis, when the bladder will

recover its tone. Cleanliness must be enjoined. Not only is careful washing needful, but warm hip baths are of value. Soothing powders must be dusted on, the vulva being opened as far as possible, and children old enough to understand the aims of the procedure will generally submit to the application at night of a small pledget of absorbent cotton wet with a healing lotion containing pinus canadensis, hamamelis, carbolic acid or similar remedy, diluted with thin boiled starch. Where the urine is normal, rhus aromatica has proved a valuable aid in controlling the habit of irritability of the bladder and relieving the symptoms till the cause can be removed.

Dr. Robert Tilley, of Chicago, read a paper on

FOUR CASES OF DISEASE OF THE MASTOID,

in which he said that Barker, of London, in a study of abscesses of the brain, states that three-fourths of the abscesses of the brain are in the temporo-sphenoidal lobes, and that nine-tenths of subdural abscesses are found in a circle 1½ inch in diameter with its centre 1¼ inch behind and 1¼ inch above the centre of the bony auditory meatus. It might be further said, remarked Dr. Tilley, that nearly all these abscesses originate from some disturbance in some part of the external auditory meatus. As long as facts substantiate this statement, the study of mastoid affections will not cease to be interesting.

The Report of the Committee on Revision of the Constitution was called for, and was presented by the Chairman, Dr. Thomas M. McIlvaine, of Peoria. The report embraced several changes, among which was dividing the scientific work of the Society into three Sections, as follows: 1. Practice of medicine, materia medica and therapeutics. 2. Surgery, ophthalmology and otology, dermatology and venereal diseases. 3. Obstetrics, gynecology, and diseases of children.

The proposed changes and recommendations, after considerable discussion, were adopted section by section, and then as a whole.

The evening session was devoted to a discussion of the question, *What Shall We Do with our Insane?* Dr. E. Ingals, of Chicago, opened the subject by a brief paper. He was followed by Judge Prendergast, Dr. R. S. Dewey, Superintendent of the Kankakee Insane Asylum, Dr. Corbus, of the State Board of Charities, and Dr. Sanger Brown, of Chicago.

(*To be concluded.*)

Arrested for Practicing Illegally.—A young physician, recently graduated from the Missouri Medical College, has been arrested in St. Louis for practicing medicine without having registered. The child whom he had been treating unfortunately died, and this led to his detection.

ASSOCIATION NEWS.

American Medical Association.—Report of the Librarian.

Mr. President:—I have the honor to present the Catalogue of Additions to the Library of the Association, made during the period extending from May 1, 1888, to June 15, 1889.

The Catalogue shows that 122 distinct titles have been added to the Library, exclusive of Transactions of Societies, Reports of Boards of Health, Medical Journals and College Announcements not previously received and catalogued. The total additions amount to about 272 volumes, so that the Library at present consists of about 7,770 volumes, representing 2,972 titles.

I would respectfully suggest that the subscription to the *Index Medicus* for the current year be continued, and that the sum of $10 be appropriated to that end. Respectfully submitted,

C. H. A. Kleinschmidt, M.D.,
Librarian.

3045 H Street, Washington, D. C.

CATALOGUE OF ADDITIONS TO THE LIBRARY OF THE AMERICAN MEDICAL ASSOCIATION, BY DONATION, EXCHANGES AND SUBSCRIPTION, FROM MAY 1, 1888, TO JUNE 15, 1889.

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MISCELLANY.

NEW YORK PASTEUR INSTITUTE.—Dr. Paul Gibier, Director of the New York Pasteur Institute, submits the following statement for the month of April: During that month seven persons were treated at the Institute. In three of these cases hydrophobia was shown to have existed in the dogs by the inoculation of other animals with the nervous substance of the dogs who had bitten the patients. In the four other cases rabies was very probable, but the dogs had disappeared, or their carcasses had been thrown away instead of being sent to the Institute.[1] The patients were: Three from New Jersey, two from Illinois, one from Massachusetts, and one from Texas. The above patients are at present all enjoying good health, as also the thirteen patients inoculated during the month of March.

THE MCLEAN COUNTY (ILL.) MEDICAL SOCIETY met on the 5th inst., the President, Dr. F. J. Parkhurst, in the chair. Dr. Godfrey reported a case of necrosis of the superior maxillary bone, with specimen of the same. Dr. F. J. Parkhurst brought before the Society a man with necrosis of the skull in which the dura mater had been exposed for four years. Dr. Galloway presented a specimen of ovarian tumor. A large number of the members were present. Dr. F. J. Parkhurst gave his inaugural address, which the Society voted to have published in the *Pantagraph*. Dr. Little was tendered a vote of thanks for his excellent paper on the "Recent Epidemic Influenza." Much time was taken with the discussion of this paper, so that Dr. Maumee's essay was postponed to the next meeting. The Society adjourned to meet the first Monday in June.

HEALTH IN MICHIGAN.—For the month of April, 1890, compared with the preceding month, the reports indicate that puerperal fever, typho-malarial fever, inflammation of brain, membranous croup, diphtheria, cholera morbus and scarlet fever increased, and that pleuritis, typhoid fever and influenza decreased in prevalence.

Compared with the preceding month the temperature was much higher, the absolute humidity was more, the relative humidity was less, the day ozone and the night ozone were more.

Compared with the average for the month of April in the four years 1886–1889, cerebro-spinal meningitis, membranous croup, measles and inflammation of kidney were more prevalent, and typho-malarial fever, typhoid fever, cholera morbus, cholera infantum and intermittent fever were less prevalent in April, 1890.

For the month of April, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was slightly higher, the absolute humidity and the relative humidity were slightly less, the day ozone was less and the night ozone was more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of April, 1890, at 53 places, scarlet fever at 54 places, typhoid fever at 17 places, and measles at 96 places.

Reports from all sources show diphtheria reported at 8 places less, scarlet fever at 16 places less, typhoid fever at 8 places less, and measles at 15 places less in the month of April, 1890, than in the preceding month.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 2, 1890, to May 8, 1890.

By direction of the Secretary of War, First Lieut. Nathan S. Jarvis, Asst. Surgeon, is relieved from duty at Camp Wade, Kingfisher, Ind. Ter., to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. Verde, Ariz., for duty at that station. Par. 12, S. O. 102, A. G. O., May 1, 1890.

Major Richard S. Vickery, Surgeon, is granted leave of absence for twenty-one days, by direction of the Secretary of War. Par. 17, S. O. 103, A. G. O., May 2, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 10, 1890.

P. A. Surgeon E. H. Green, ordered to the receiving ship "Dale," Washington Navy Yard.

P. A. Surgeon Robert Whiting, detached from the "Dale" and to the nautical school ship "St. Mary's."

P. A. Surgeon H. M. Whitaker, detached from the "St. Mary's" and resigned, to take effect November 5, 1890.

Surgeon J. W. Ross, ordered to the Navy Yard, Pensacola, Fla.

Surgeon J. M. Flint, appointed a delegate to represent the Medical Department of the Navy at the Pharmacopœia Convention to be held in Washington May 7.

Medical Director R. C. Dean and Medical Inspector Theoron Woolverton, appointed delegates to the American Medical Association convention to be held at Nashville, Tenn., May 20, 1890.

[1] At the last moment we are informed that another person who was bitten by one of these dogs died with hydrophobia. This person had not been treated at the Institute.

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ADDRESSES.

THE PRESIDENT'S ADDRESS.

Delivered at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 20, 1890.

BY E. M. MOORE, M.D.,

OF ROCHESTER, N. Y.

Another year has brought the Association to a renewal of its labors. It now stands, and will stand, as the exponent of the profession in its varied relations to the community and to its members. It will be immovable to adverse criticisms, as long as it upholds the traditions of the profession which themselves are the outcome of the highest sentiments of humanity. Generous and liberal it hopes for the recognition of its high standard by all.

It is not forgetful of the fact that the grand army enlisted under the banners of the medical profession has always been infested by the bummer and guerrilla in it march down the ages. As time goes on new duties arise that are the natural outgrowth of the conditions that surround us. A survey of the field of action imposed by our proper relations to the communities we live amongst, and by those incident to our associate character to the nation at large, impresses me with a deep sense of our duty in urging forward the active exercise of those measures which science has thus far indicated for the promotion of hygeine. It has too long been the fact that this whole topic has been developed by the medical philosopher, and not until recently by any one who has a direct professional interest in its study.

Mankind expected information and aid from those that it failed to compensate. Perhaps the most profound thinker upon the organization of government, that the last hundred years has produced among the English speaking people was Jeremy Bentham. His works adorn the shelves of good public libraries, and are seldom disturbed in their resting places. The world has reached the goal that he indicated as the most important one for mankind to reach: "The greatest happiness for the greatest number."

To enforce this doctrine upon the minds of his readers, which he did with great minuteness of detail, by arguments of the most elaborate kind, seems to an American audience as unnecessary, as to prove that two and two make four. But while his thoughts were directed to the consideration of right conduct in all conditions of society, his words were especially addressed to his own people. I think few persons have the slightest knowledge of Bentham's labors, except through the contemptuous sneers of the aristocratic element of society, which wielded the powers of the government under which he lived. His views at the time of his writing incorporated in the structure of our own nationality, have become the aim of all civilized people. After a life spent in the most searching enquiries into the wants of our common humanity, the whole was brought to a focus upon the details as well as the generalization of a constitutional code. This minutely expanded and spread over the pages of a large octavo volume, in order to give the most careful attention to the detail, and yet technically concise, fills one with amazement at the intellectual effort. It was the life work of a great man. The executive head of this proposed government, was a prime minister as the regulator of the functionaries below him. These were numerous. The foreign affairs minister appears very naturally. The treasury minister as well. The army minister and the navy minister are all treated of with the most minute detail. On a par with these is the health minister.

What has been the progress of opinion on this subject of hygeine? Can we feel that it has received a tithe of the consideration that it deserves. Says an observant foreigner, "the Americans are bright and intelligent people, but they care nothing for health; they lavish it, and when it is gone, they lavish money on pills." What a truthful sketch of our lives. We are here to-day because we are therapeutists and not because we are hygeinists. Nevertheless we have no cause for discouragement. Great movements are slow. The national conduct is but the reflex of the individual behavior. The average citizen accepts health as he does the air he breathes as his natural right. He joins in the race for wealth or place, as if to determine the scientific problem of the survival of the fittest, gibes the doctor and "throws physic to the dogs." Suddenly he be-

comes aware that the pace is killing. Then he begs for pills. Then comes the search for a panacea or catholocon. To set his house in order and pursue the reasonable aims of life in a reasonable manner, is the method of a rare man. What has been the conduct of the aggregate man? Precisely the same. Contemptuous of precaution when the pestilence came, he has, until lately, known little else than a resort to the semi-religious Oriental forty days, his quarantine. That we are emerging from this state, and that precautions are sometimes employed is admitted. But that the legislative and executive efforts keeps pace with the progress of science I am quite sure is not true. Still at the present time it is accelerating. It must ever be the care of the profession to promote and guard the movement. The conduct of the matters appertaining to hygeine must ever be under its direction. The understanding that informs the executive, must be of the highest order and best training. The interests at stake are enormous, not merely to health and life, which of course are paramount, but also to those that concern the property of mankind.

The tearing off the shackles that impeded commerce and human movement in passed time, is due to medical science as applied to hygeine, and this long before the amazing discoveries in bacteriology of to-day, which have given a scientific demonstration of the correctness of methods already formulated, the result of experience and observation.

The history of legislation confirms these views, and yet its present status is full of encouragement. I have studied the work of Congress as shown in the laws from its inception to the present time. I must confess not a very laborious undertaking. The first Act passed by Congress with reference to health matters was in 1796, February 26. It directed the President of the United States to assist the State Government in the execution of the State laws upon the subject of quarantine by his commands to all officers of ports on the coast and commanders of revenue cutters. This short Act was repealed by another and more comprehensive one passed February 26, 1799. This Act relieved the President of any direct attention to matters of quarantine, by placing its care in the hands of the Secretary of the Treasury. This was obviously done because the question of revenue was involved in unloading and disinfecting ships. The Act, however, first reaffirms the relations of the United States Government to that of the States.

"And the said Secretary may be, and he is hereby authorized, when in conformity to such quarantine and health laws, shall require it, and in respect to vessels which shall be subject thereto, to prolong the term limited for the entry of the same and the report or entry of the cargoes, and to vary or dispense with any other regulations applicable to such report or entry. Provided that nothing herein shall enable any State to collect a duty of tonnage or import without the consent of the Congress of the United States thereto. And provided that no part of the cargo of any vessel shall in any case be taken out or unladen therefrom otherwise than by law allowed or according to the regulations hereinafter established.

Section 2 of the Act provides for the care of the vessel and the cargo when the health laws declare the necessity of unloading and removal to some place other than usual.

All this to be under the care of the Secretary of the Treasury, who exercises complete control of said cargoes until the revenues accruing have been paid, and the health authorities have released them.

Section 3 directs the Secretary of the Treasury to provide proper storehouses at proper sites for the care of the property according to the requirements of the health laws of the State, and at such convenient place or places therein as the safety of the public revenue may demand.

Section 4 provides for the safety of the officers connected with the revenue service, by allowing them to remove their offices to a safer position if an epidemic should prevail.

Section 5 provides for the adjournment of any United States court, and also for the removal of prisoners to another place of confinement at the expense of the United States during an epidemic.

Section 6 gives power to the President of the United States to remove any or all public officers if necessary.

Thus early was initiated a policy which has prevailed to the present time and which has been watched with great care and jealousy. The rights of a State have been asserted and maintained with the endorsement of the highest tribunal, not without some friction, the natural treatment of our dual government. No further legislation appears on the statute books until 1832, when a cautious expenditure is made to aid in enforcing the law by providing for more revenue cutters if necessary, but the force of the Act terminated within a year. From this time there is complete silence on health legislation until 1844, when an Act was passed providing for a special building at Lazaretto Point, for the purpose of quarantine. But shortly after this the country was visited by an epidemic of cholera. The previous one occurring in 1832, and far more severe, which struck fear into the heart of the nation, depopulating cities, was left to the management of the local authorities. No health organization worthy the name existed at any point. Indeed the natural guardians of the people, the members of the medical profession, were appalled and misdirected by erroneous theories of the disease. Two more epi-

demics supervened, and the transmission of cholera by persons to localities was no longer to be questioned. A vague atmospheric cause that no one could escape did not explain the phenomena of the disease. Accordingly we find the nation becoming aroused, and on May 26, 1866, a joint resolution was passed by Congress which declares "that the Secretary of the Treasury be and he is hereby, authorized to make and carry into effect such order and regulations of quarantine as in his opinion may be deemed necessary and proper to aid State or municipal authorities to guard against the introduction of cholera into the ports of the United States. And the Secretary of the Treasury is further authorized to direct the revenue officers and the officers commanding revenue cutters to aid in the execution of such quarantine, and the execution of the health laws of the States respectively, in such a manner as may seem to him necessary. And such an amount of money as may be necessary to carry into effect this joint resolution, is hereby appropriated out of any money in the Treasury not otherwise appropriated; provided, the authority hereby granted shall expire on the first Monday of January, Anno Domini 1867."

Here again we have the Secretary of the Treasury circumscribed in his action by the limitation of time, and that a short one. Special attention in health matters is again relaxed for ten years, the ordinary machinery of government being entrusted simply with the duties of quarantine, but in 1876 attention to the wants of the District of Columbia was given by an Act that provides for the salaries of the health officer and his assistants and allows ten thousand dollars in the event of an epidemic occurring. During the next year there were further modifications and a larger sum of money granted. From this time forward appropriations for the District are made yearly and in varying amounts.

Another great step in the movement of hygiene was an Act passed April, 1878, directing the Surgeon-General of the Marine-Hospital Service to make rules for the consuls in foreign ports with reference to certificates declaring the condition of the vessels and cargoes bound for ports in the United States. Then follows an Act showing further attention to details by changing the organization of the health board of the District of Columbia, it being abolished, and its powers transferred to the Commissioners of the District, the salary of the health officer being fixed at three thousand dollars. But before the close of the year another great movement in advance was made in legislation by an appropriation for paying the necessary expenses incurred in investigating the origin and causes of epidemic diseases in the United States. But in the meantime another great movement in the study of hygiene had been effected by the organization of State boards of health. The local boards existed with ample powers, but total neglect of duties. In the large cities, however, there were able men whose whole time was given to the work and sufficiently compensated, to bring the attention of the communities they lived in to the vast defect of municipal life.

Knowledge was expanding, and that most remarkable and valuable of all the engines for the promotion of hygiene, the State board of health, came into existence. This was not without great labor and heart-sickening delay. The best informed could see the great good, but the watchful conservative was stirred to the utmost, and regarded with horror the vast powers which the health organization must exercise directly or indirectly.

It has ever been difficult to make the citizen, in the enjoyment of the great freedom of motion of which the English and American people are so jealous, to submit to military control in time of peace, and a control which reaches into his special domain, his conventional castle. But the local boards in the smaller communities were ever asleep at their posts until some fearful invasion of small-pox roused them to action. Then they, perhaps for the first time, studied the statutes of their State government to learn that their power was military, and the citizen, pale with fear, submitted to the restraint necessary for his safety. Then, in the rural district, he would assist in stretching the fence across the road to enforce the necessary quarantine. But as soon as the great danger was passed he would lapse into freedom, and perhaps jeer at vaccination.

But the conditions for controlling the invasion of pestilence are those of military operation. Power must be autocratic—an enemy is to be resisted, pursued, destroyed. Our external defenses must be constantly manned. Vigilance must never be relaxed. For the protection of society a military organization is in constant existence; it may be a sleeping lion, but it is a lion still. Thus the cholera and yellow fever must be met. The invading hordes are invisible, but they come like the genii of Oriental stories. Panic sometimes attacks the best disciplined armies in an unaccountable manner. But when pestilence strikes a city the boldest flee.

To the credit of our age, even the superstitions do not bow their heads to the mysterious ways of Providence, but rise to the effort to obey his laws. Science searches out the enemy and devises the attack. But the machinery of defense must be in constant order. To bring about this result the State board of health came into existence. As has already been said, the development of this body was slow.

The power conferred on it in different States has not been precisely the same. In most of them it has no power at all. They are merely

advisory bodies. The power is to be exercised by the Governor of the State who is expected to receive their instructions. Even at this time there are some States that have not erected this organization. But where once created they have remained. The jealousy of the military power has passed away, for it has not been used as a means of oppression and the benefits flowing from it have been so great that not one board has been destroyed. They have furnished hygienists for the nation. They have brought the local boards to the performance of their duties in a greater degree. I believe their life is secure and great expectations may be entertained of their future usefulness. It is idle to suppose that the executive of any State has the knowledge which can direct him in the right path of action. This must be the outgrowth of science ever advancing. But nations are naturally fearful of professional dictation. This has been shown by the fear of military men in control of free States. The success of the State boards very naturally pointed to the erection of the National board. It seemed to those most familiar with their workings, that such an institution would fill the measure necessary for the wants of the nation. It was the reflex action of our governmental structure. It was suggested that a permanent organization should be representative of the State boards and thus be in touch with the people. Such opinions were, however, speculative and looked to the future. When these views were agitated, the scourge of pestilence was present. Action could not be delayed, and a board thought to be representative of large interests should be formed at once. But the Act itself provided for the future by calling on those supposed to be best able to make a competent selection. It was found that the plan at first adopted, met the conditions required and it was believed by those selected to judge, to be the best one after its first year of trial.

On March 3, 1879, an Act was passed to prevent the introduction of infectious or contagious diseases into the United States and establish a National Board of Health. This is such an important part of our history that I quote it entire.

Be it enacted, by the Senate and House of Representatives of the United States of America in Congress assembled, that there shall be established a National Board of Health to consist of seven members to be appointed by the President by and with the advice and consent of the Senate, not more than one of whom shall be appointed from any one State, whose compensation during the time when actually engaged in the performance of their duties under this Act, shall be ten dollars per diem each, and reasonable expenses, and of one medical officer of the army, one medical officer of the navy, one medical officer of the marine-hospital service, and one officer from the department of justice, to be detailed by the Secretaries of the several departments, and the Attorney-General respectively, and the officers so detailed shall receive no compensation. Said board shall meet in Washington within twenty days after the passage of this Act, and in Washington or elsewhere from time to time upon notice from the president of the board who is to be chosen by the members thereof or upon its own adjournment, and shall frame all rules and regulations authorized or required by this Act, and shall make or cause to be made such an examination and investigation at any place or places within the United States, or at a foreign port, as they may deem best to aid in the execution of this Act and the promotion of its objects.

Section 2. The duties of the National Board of Health shall be to obtain information upon matters affecting the public health, to advise the several departments of the Government, the executives of the several States, and the Commissioners of the District of Columbia, on all questions submitted by them, or whenever, in the opinion of the Board, such advice may tend to the preservation and improvement of the public health.

Section 3. That the Board of Health, with the assistance of the Academy of Science, which is hereby requested and directed to coöperate with it for that purpose, shall report to Congress at its next session, a full statement of its transactions, together with a plan for a National public health organization, which plan shall be prepared after consultation with the principal sanitary organizations, and the sanitarians of the several States of the United States, special attention being given to the subject of quarantine, both maritime and inland, and especially as to regulations which should be established between State and local systems of quarantine, and a National quarantine system.

Section 4. The sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated to pay the salaries and expenses of said Board, and to carry out the purposes of this Act.

In April of the same year $200,000 was appropriated for the construction of a refrigerating ship for the purpose of disinfecting ships and cargoes, but on June 22 of the same year it was found necessary to state the powers of the National Board of Health. This was done by an Act elaborately defining its functions. These it is unnecessary to recapitulate, the vital part of the Bill is contained in the third section, which directs the "National Board of Health to coöperate with State and municipal boards of health in the enforcement and execution of the rules and regulations as set forth, to prevent the introduction of contagious or infectious diseases into the United States from foreign countries and into one State from another and at such ports and places within the United States, where quarantine regulations exist, under the authority of the State, which in the opinion of the National Board are not sufficient to prevent the introduction of such diseases into the United States or into one State from another, the National Board of Health shall report the fact to the President of the United States who shall if in his judgment it is necessary and proper order such board of health to make such additional rules and regulations, as are necessary to prevent the introduction of such diseases into the United States from foreign countries or into one State from another which when so made and approved by the president, shall be promulgated by the National Board of Health and enforced by the sanitary authorities of the States where the State authorities will undertake to execute and enforce them; but if the State

authorities shall fail or refuse to enforce such rules and regulations the President may detail an officer or appoint a proper person for that purpose."

To carry out the functions imposed upon it the sum of five hundred thousand dollars was appropriated. Thus it would seem that the National board was constructed upon the model of the State board by its being directed to report to the President instead of the Secretary of the Treasury.

The National Board of Health has a splendid record. Brought into being by the presence of an overwhelming calamity with doubts and misgivings in regard to its real status and the fear that the Constitution would not justify its action, it achieved a success that was the most remarkable in the history of hygiene. It found Memphis a pest house and initiated the measures that made it a healthy and flourishing city. It has seldom fallen to the lot of any organization to so instantly and completely justify its existence. The report of the National Board of Health is one of the most elaborate and able productions that has been put forth by any body of men as far as my reading goes. Although a decade has now passed by, a period of great movement in sanitary matters, it is fresh and readable.

This would be expected from the array of names making the report. It undertook the mastery of the whole subject of sanitation, not merely the war against epidemic diseases. It undertook to detect the adulteration of foods and drugs. It investigated the subjects of sewerage and drainage and ventilation.

The most active and prominent of all the *dramatis personæ* among the functionaries of health under the direct rule of the National government is the organization known as the Marine-Hospital Service. This was founded in 1798, as an insurance against the calamities of sickness on the part of the employés of the commercial marine of the country. The nature of a sailor's avocation places him at the mercy of strangers, when sickness comes upon him, and a provision against that terrible misfortune is one of primary necessity. The functions of this Service have been maintained, and extended for a period nearly contemporaneous with the formation of our government. One cannot read the list of the houses of refuge which are directly constructed and managed by this Service or indirectly obtained by employing through contract the use of hospitals under the care of others, without a strong feeling of admiration for the care with which the Service is administrated. At every point of our immense shore line there seems to be provision for the sailors' necessities. This Service was placed under the supervision of the Secretary of the Treasury. The collection of the custom dues was naturally the function of this Secretary. Thus was established a closer relation between this officer and the Marine-Hospital Service. There is certainly nothing in the organization of this Service which calls for its employment, for making rules for the conduct of quarantine. But the Secretary of the Treasury when charged with certain duties in this connection has upon him the necessity of employing agents competent to perform these duties.

He finds willing and competent agents at his hand in the functionaries of an institution organized for quite a different purpose, men whose education and training already fit them for the new duties imposed upon them. Their execution of those duties has commanded the confidence of Congress, which has added, from time to time, new ones to be performed by them. The sailor himself, the most exposed of all the citizens of the Republic to the dangers of epidemics, would naturally bring the professional man who had care of him into close contact with and study of these diseases. Hence it is easy to understand how, as has been happily said, this department has, by a sort of evolution, become an important sub-department of the Government. The late Dr. John M. Woodworth took the most lively interest in this development, and contributed by his advice to the construction of rules and regulations bearing on the relations of our Government to others in the matter of quarantine.

As a specimen of such legislation we may note the following instructions:

To officers of the Customs Revenue, Medical Officers of the Marine-Hospital Service, and others whom it may concern:

The Act approved April 29, 1878, entitled, "An Act to prevent the introduction of contagious or infectious diseases into the United States," provides that no vessel coming from a foreign port or country where any contagious or infectious disease exists, nor any vessel conveying infected merchandise, shall enter any port of the United States or pass the boundary line between the United States and any foreign country, except in such manner as may be prescribed under said Act.

Attention has been called to the prevalence of a dangerous epidemic disease in Southern Russia, known as the plague, and its extremely virulent and contagious character, as manifested in the late outbreak, leaves no doubt that it is similar to, if not identical with, the "plague" which devastated the Old World in past centuries.

Because, therefore, of the danger which attaches to rags, furs, etc., as carriers of infection, the following regulations are framed, under the direction of the Secretary of the Treasury, and subject to the approval of the President, for the protection of the health of the people of the United States against the danger referred to:

Until further orders, no vessel from any port of the Black Sea, or the Sea of Azof, conveying any rags, furs, skins, hair, feathers, boxed or bailed clothing or bedding, or any similar articles liable to convey infection, nor any vessel from any port of the Mediterranean or Red Seas having on board such articles coming from Southern Russia, shall enter any port of the United States until such articles shall have been removed from the vessel to open lighters, or to some isolated locality, and the vessel disinfected and thoroughly ventilated; and the suspected articles shall be disinfected, either by chemical agents and exposure to free currents of air, or by burning, as

shall be determined in each case by the Surgeon-General of the Marine-Hospital Service.

The recognition of the rights of the States is found in the statement that "The certificate of the State or municipal quarantine officer of health may be accepted as satisfactory evidence of compliance with these regulations on the part of the vessel."

It is not my purpose to define in detail the action of the Marine-Hospital Service. But I may observe that the duties incident to quarantine have been increased and rendered more accurate as time has brought more knowledge. I might note the imposition upon the consuls at foreign ports, of the duties of inspection and report upon the condition of the vessel, cargo and passengers. The suggestion of the law requiring such action comes from the present Surgeon-General of the Marine-Hospital Service, and upon him was placed the duty of constructing the rules. When the National Board of Health came into existence, the duties incident to the enforcement of quarantine and other matters outside of those that appertained to the organization of the Marine-Hospital Service, were transferred to its jurisdiction. But it found these rules already at its hand and they were accordingly adopted. To the active energy of Dr. J. B. Hamilton we owe very largely the evolution of good methods in dealing with the matters of quarantine. One has only to read the circulars put forth to the officers scattered along our enormous coast line, and those addressed to our consuls, to recognize the careful scrutiny he has made of the situation. It is impossible in the hour at my disposal to quote from these circulars. I could only cite one as a specimen of many. But I cannot pass away from what I should say of the Service without calling attention to the land quarantine, which may be considered as a new feature of the work. During periods of panic caused by epidemics, the first movement is flight from the suspected. But when the fugitive draws nigh an uninfected region, he is warned off at the peril of his life, hence the natural origin of the shot-gun quarantine. Townships invaded by small-pox are at times thus treated. When yellow fever fastened on a locality, such a place was at once brought under the shot-gun. This barbarous method affords no relief to the stricken, and is not only disastrous to life, but destructive to vast commercial interests.

To modify this and yet give security to those beyond the seat of pestilence, was the purpose of the land quarantine.

To guard the unaffected and yet allow the exposed safe conduct when they would not infect others, was the basis of action. To carry out such a plan would of course annoy those that came under the order of such regulations as were necessary; but this would be true of any quarantine whatsoever. If properly ordered, the method is not the shot-gun policy but a substitute for it. Refuge camps, as has been said by Dr. Hamilton, are no new invention, but a quarantine camp along an inland route which provides for the detention of those flying from districts in which they have been exposed to contagious diseases in order that disinfection may be practiced upon their effects during the incubation of the disease, is a new movement in the evolution of the methods necessary to arrest epidemics. Such was Camp Perry.

When a case of yellow fever appeared among the detained, it was at once removed to the improvised hospital. That loud complaints should be made of this land quarantine, was to be expected, but time justified the plan, for in the end it was found that no place became infected by those who were filtered through its alembic. Success must be the test. Applied science must make the method. Such a place was Camp Perry. Placed almost on the line that separates Georgia from Florida, it was prepared to execute one of the recognized functions of the National Government in the regulation of commerce between the States, which is not merely the transportation of goods over a line. It takes in the relations of men. One cannot read the description by Dr. Hutton, in the Annual Report of the Marine-Hospital Service, without being convinced of the excellent arrangement of the extemporized building. A little confusion at first was soon replaced by order and military regularity. As before remarked, this scores another step in the rapid progress of development going on in sanitary matters.

There is another field of sanitary action that should be noticed in this place.

In the year 1884, the consideration of animal diseases was transferred from the care of the Secretary of the Treasury to the Commissioner of Agriculture. This change would seem to be natural. One can hardly conceive of a more uncongenial combination than a bureau of finance and one of scientific investigation. As a result of this change a bureau of animal industry was created for the study and management of contagious diseases in animals. About fifty years ago the disease known as pleuro-pneumonia appeared among cattle in this country, but it was confined to a few localities. But as the cattle industry assumed the enormous proportions that it has at the present time, the disease began to show itself in the West about ten years since.

If allowed to spread it would be difficult to measure the injury to the material interests of the Nation, taking no account of the sanitary question in its relations to human life. The activity of the Commissioner of Agriculture has been very successful in arresting the spread of the disease, especially in the West, by far the most important field for his labor. He has had more difficulty in dealing with the subject in and near the cities in the East, more jealousy of official

interference, more numerous owners of small collections, rendering the evasion of the police regulations more easy. But the results are gratifying on the whole.

Here we find our dual government capable of executing admirable work, while it is evident that the State rights can ever be a check on unwarranted action. But the general government is capable of protecting communicating States suffering from the unfriendly acts of their neighbors. The regulations of commerce at the border is a powerful engine of control in all these relations. A State refusing acquiescence in proper sanitary laws, soon finds its interest impaired by the quarantine that can be placed on it.

Again, the States themselves have established quarantine against neighboring ones where there was known to be pleuro-pneumonia among their cattle, thus reducing their ability to find a market for those that were sound. The intervention of the general government, by their inspection and disinfection, was sufficient to cause the withdrawal of this shot-gun policy.

The principle of coöperation with the State authorities was the one that became successful. The diseases being epidemic, are a matter of concern for the whole Nation.

We cannot escape the duty of destroying an invasion. If the attack is severe over any considerable surface of territory it paralyzes all local effort by the ruin it brings upon so many individuals. If it were like the destruction by a tornado or conflagration, it would not call for legislative action. The remedy, if needed, would flow from benevolence. But it does not stop here. The whole are endangered. Political boundaries do not exist for it. The invasion must be resisted. In the year 1884, money was appropriated for the bureau of animal industry to investigate and arrest, as far as possible, the extension of pleuro-pneumonia. But this did not grant to the commission the privilege of purchasing the diseased animals and then destroying them. The law as first established did not authorize the slaughter of affected animals, but only gave the right to establish quarantine, such as might be necessary to prevent the spread of contagious diseases from one State or Territory to another. It was found impossible to maintain a sufficient quarantine under the law. The disease is one that often assumes a mild and chronic form, with symptoms so moderate as to make diagnoses uncertain, and thus cases would exist capable of conveying the infection. The experience of European nations had already settled the question of the only sure method of procedure. This consists in the slaughter not only of the diseased animals, but those herding with them. If there had been an exposure, there can be no assurance that one such, when removed to other associations, may not afterwards have the disease developed. The continuance of the quarantine during the usual period of incubation is hardly a certain assurance of immunity. The exportation of animals to Great Britain was so restricted that no cattle, sheep or swine could be sent from this country except for slaughter at the landing place. Benefits of time after a voyage were thus cut off, to the great detriment of the trade.

The exportation of sheep declined from 108,652 in 1879, to 32,510 in 1884; and that of swine from 25,033 in 1879, to 4 in 1884. But the restrictions to commerce in animals were not confined to foreign lands. Our own States set bounds on the traffic. While it is impossible for any State to levy a tax or impose any form of custom duty or other methods of interfering with commerce, the health laws allow complete non-intercourse in the presence of epidemic diseases.

Quarantine can be set up even in the townships. The Commissioner of Agriculture has been able to happily supplant these absolute restrictions by better methods. Nothing, however, could be done efficiently without the consent of the States. In most of them the laws were imperfect. In the shadow of a great danger these were amended so as to coöperate with the National authorities. But it was found, as soon as an attempt was made to arrest a disease, that private efforts were sufficient to neutralize all efforts, unless a fund large enough to pay for all animals to be slaughtered, was appropriated. This the State failed to do. Attempts have been made in localities to get money by subscription to destroy some herds, from the owners of neighboring ones which were free from disease. But this failed. Congress was now asked for more money and the power to use it as the Commissioner thought best.

Accordingly, an Act was passed in 1866 placing $500,000 in the hands of the Commissioner, who might use "any part of this sum in the purchase and destruction of any diseased or exposed animals, and the quarantine of the same." Immediately after the Bill became a law, rules and regulations were drawn up and submitted to the Governors of States for their approval. Thirty-one States adopted these, and in the year 1887 the work was in full play. The magnitude of this work can be appreciated when it is learned that from August, 1886, to October 31, 1887, the inspectors of the bureau carefully examined 15,387 herds containing 117,480 animals, in districts where the disease was supposed to exist. Among these were found 798 herds, containing 10,766 animals, of which 2,235 were affected with pleuro-pneumonia. Besides these there were 2,873 head of cattle in the distillery stables of Chicago, nearly one-half of which were diseased. This work was nearly all done in the West. During the succeeding year the inspection was extended to the East, including the great cities of New York and Philadelphia. A more thorough agreement having

been reached between the States and National authorities, there were inspected during the time between January 1, 1888, and November 30 of the same year, 35,451 herds, containing 304,698 head of cattle. Of these 183,257 were tagged and registered upon the books of the office. There have been 41,361 post-mortem examinations made, and 3,380 carcasses were found to be affected with pleuro-pneumonia. The quarantine stations have been carefully guarded, and it is believed that no importation of diseased cattle has occurred. But there are many other diseases of a contagious character among other domestic animals. The most important, from which losses in money are to be counted in millions of dollars, are those of swine, notably those of hog cholera and the swine plague. In the study of these the laboratory work of the Department of Agriculture has been great and expensive.

The bacilli that are connected with these fatal diseases have been studied with great care. Accurate results have been obtained in consequence of the ability to use the pure cultures to produce the disease in animals previously healthy. Thus two distinct diseases have been diagnosticated; one affecting the bowels alone, the hog cholera, and the other having its chief seat in the lungs, and secondarily in the bowels. It has also been shown that the bacilli of hog cholera will retain its vitality in water for four months, and in the soil for two or three. Such bacteriological researches reflect great credit upon the bureau. Its studies extend to other animals, but the sphere is more limited.

It must ever be borne in mind that the organization of State defences and the execution of the methods necessary to eradicate the causes of infective or contagious diseases, are military in character. We use a common eupheuism when we call all these measures police regulations, but the proper name is war. We have an insidious and sanguinary foe to meet. The measures to be taken must be prompt and thorough. A health board may be a good council of war, but the executive officer is the important man. How important that he should be competent! But to this he must be trained.

The force to carry on the work of sanitation has a strict analogy with the structure of an army. The medical officers must have under them inspectors of various degrees of training, as well as men to fulfil still minor functions. All this has been happily indicated by the head of the Marine-Hospital Service. His plan must become the germ of the future management of the sanitary service. I do not apprehend difficulties to arise from political appointments. The methods now used cannot well be ignored. Indeed, these appointments must have the character of commissions, as in other military formations. Along with such *personnel* will be developed the machinery of war. We do not need Krupp or dynamite guns. But we do need trains of cars which will carry the most elaborate arrangement for fumigation and disinfection, as well as dwellings for the detained, ready to be transported with all the conveniences of living.

At the present time the government is building expensive vessels, but not expensive in a military sense, arranged with apparatus for disinfecting the contents of a vessel alongside of which it can be moored. The admirable Holt system furnishes the cue to all these measures.

Sanitarians at once recognized the duty of all governments to extirpate epidemic diseases in their endemic homes. But these are apt to be found among ignorant and shiftless people, often maintained by religious fanaticism.

Vast hordes of Hindoos are collected on the Ganges at special points to bathe in its sacred waters on a special day, and also to drink of them. The multitude encamped on its banks, awaiting the supreme moment of religious exaltation, defile the waters so as to render them admirably efficient for their devilish work. Beatification having been obtained, the wretched victims of superstition fly along every route, scattering the cholera over the world.

More than twenty years ago this writer, in a public address, insisted that the long arm of Europe should reach into the heart of Asia and compel these fanatics to cease consuming their own dirt. Surgeon-General Hamilton, in an excellent paper, has brought out the same thought with reference to the haunts of yellow fever.

If a band of fillibusters should land on the remotest Florida Key, the American heart would throb with rage from Alaska to Eastport. Yet we are silent when invaded by the invisible hosts who will soon destroy more lives than will occur in the most sanguinary battles. A large number of facts bearing upon the subject of hygiene are passed by for want of time in their enumeration.

The Government has shown willingness to advance in the great work of hygeine when properly approached, but does not readily take the initiative. I might cite many instances of this. I might detail the accounts of Dr. Sternberg's investigation of the application of attenuated yellow fever virus, after Pasteur's method by Dr. Domingues Freire, of Rio Janeiro, whose scientific claims were so utterly demolished that you feel pity for the victim. I might speak of the international conference for promoting uniformity of action in matters of hygeine, marking a splendid advance in the application of science to practice showing that "all the world's akin." I might detail the doings of the convention of Montgomery, and mark the influence of the Public Health Association, and of many other things showing the grand movement of the day.

But besides the great matters of external quar-

antine which are necessary to the obstruction of epidemics, there is the necessity of regulations which have been but moderately attended to, and yet are of the greatest importance.

The contagiousness of diphtheria and scarlet fever, and the known transmission of these terrible scourges by fomites has received but little attention. The disinfection of cars has not been systematically attempted, but calls for investigation and a general ruling. This matter alone will necessitate a large force of inspectors. It can hardly be done except by the National Government, which should stand guard at every State line, as well as on the outer border.

The vast questions relating to the adulteration of food should come under the same rule as other sanitary questions.

While this writer was a member of the State Board of Health of New York, it received notice of a ship having arrived from China, loaded with what the Celestials call "lie tea." It immediately took measures to have the pseudo-tea thrown into the harbor, but it was confronted with the question of jurisdiction. The owners soon became aware of its intentions, and before the machinery of law could be invoked the industrious drummers threaded the routes of commerce, and we had no "lie tea" to throw overboard.

There are also vast questions yet untouched involved in the prevention of malarial diseases. The drainage of swamps is a matter which will task the best judgment of scientists and engineers. States shrink from any consideration of the subject, appalled by its magnitude, nevertheless upon them the work must essentially fall. But pestilential swamps cross State lines, and one State may be much injured by the action of its neighbor. The difficulties surrounding these questions are prospective, but their solution will be demanded as population grows more dense.

In all this I have presented to you nothing new. To many of you the facts to which I have alluded are far more familiar than to myself. But their recital was necessary to focus the attention upon the situation. The relations of our dual government have become more clearly defined than formerly as the necessity of action has arisen. The interference of the National government with the States, in the exercise of their just rights, will always be resented, and in my judgment should be most jealously. But this does not absolve the National government from the performance of paramount duties in the various relations thus far cited.

Can a National board of health execute the functions indicated? It found itself embarrassed almost at once by its size and created an executive committee. If it undertakes to perform the duties necessary, it must organize a permanent force and be constantly in session, or divide its membership so that each one shall be the executive head of a drawer in a large bureau. This surely would be no gain over a bureau superintended by one man. The Secretary of the Treasury is that one man now. But the relation is an absurd one. In a village board of health would any one choose the banker as its head because of his trade? Has a financial functionary any conceivable relation to a scientific body, of a natural kind? The true solution of this vexed question should be found as in the end it must be, by the appointment of a single man who will give his undivided attention to this great subject. He should be to his functionaries what the Secretary of War is to his. It is not essentially desirable that he should be a medical man. Probably it would be undesirable. Our government in its concrete form represents the people, and the Secretary of War and Navy are not professional soldiers or sailors, and thus they stand between the purely professional organization and the people. My own observation has shown me that a layman on a State Board of Health is one of its most valuable members, rapidly coming into relation with the ideas of his confrères and giving assurance to the community. Moreover, the expansion which an organized system would assume needs this position. As I have said I do not fear political dangers. Indeed, I do not see that they would be other than those we incur at present. The members of the National Board of Health, drawn from civil life, might in time become subject to the baneful influence of political choice. But the Army and Navy are free from this in virtue of the commissions they hold. The medical men must be confirmed in their places by the same method. Experience has shown that the best talent can be thus secured. Surgeon-General Hamilton has developed this plan with eminent success. When a government can draw upon such men as Sternberg, and Billings, and Guiteras, it is independent of choice from civil life. The Department of Agriculture found the bureau of animal industry was altogether taken up with the consideration of animal diseases. It would seem to be cognate, but the natural outcome of such a bureau should be the improvement of animals and their financial relation to the country. The sanitary questions involved should be gathered into the same hands that wield the powers of government with reference to contagious diseases in human beings. This bureau has developed excellent scientific workers. The Marine-Hospital Service and the Army and Navy have their laboratories and pursue original investigations. The control of all should be under one head. It would thus become far more efficient. The time has come and now is when the health minister should be appointed.

I close my discourse as I began it, by saying

that the profession, both in its aggregate character as represented by this body and by its individual members, should urge on the execution of this movement, the ultimate one in our government. When this is done, this department will expand to the necessities of the case. There will be no dividing of the responsibility, and there will be constant watchfulness during the war which is inevitable. When this shall have been accomplished it will be found that of all the men chosen by the chief of our magnificent government, to aid him in carrying on its functions, the one who will have the most arduous labors to perform and the most delicate functions to execute, will be the Secretary of Sanitation.

THE ADDRESS ON MEDICINE.

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The intelligent and thoughtful physician, reasonably familiar with current medical literature, has not failed to notice the extraordinary activity in many lines of investigation, and the rapidity of changes in almost every department of practice, that characterize the present period of time. And if he could safely regard all positive assertions as facts, all changes as progress, and all progress as genuine improvement, then surely, he might justly claim the last two or three decades of time as an epoch of improvement in the science and art of medicine without a parallel in all the past centuries.

It is no part of my present purpose, however, to attempt a review of the general field of medicine, but rather to ask your attention to only a limited number of the topics and tendencies that are at present exerting an important influence on the progress of true medical science and on the results of medical practice. Every period of unusual activity of investigation and advancement in any department of the great field of medicine, may be traced to some new discovery in the collateral sciences, or to some new application of facts and physical laws already well known. Thus, the simple application of the anæsthetic properties of nitrous oxide, ether and chloroform to the prevention of pain, supplemented by the application of antiseptics and germicides for the prevention of suppuration, has not only given to the practical surgery of to-day its extraordinary development, but has enabled its votaries to boldly invade every region or cavity of the human body to remove morbid developments or to repair injuries. So too, the application of chemical and physical laws to the study of the composition and minute structure of organized tissues, both in health and disease, by the analytical processes of the chemist, and the revelations of the compound microscope and the spectroscope, not only revealed to us the minute structures and their modes of development from the simple vitalized speck of bioplasm to the most delicate and complete of animal structures, but they soon detected in morbid conditions new chemical products or ptomaines and the germs of fermentation and suppuration.

It is to these simple beginnings we owe the unparalleled activity in the application of chemistry and microscopy to biological, bacteriological, etiological, pathological, sanitary and therapeutic investigations that has characterized the last two decades. Indeed, so strongly has the medical mind become engrossed in the microscopic search for bacteria or microörganisms as causes of disease, and in the minute structural changes constituting morbid anatomy, that true pathology or the philosophy of morbid processes and the laws that govern them has been nearly lost sight of. And as a necessary coincidence of this intense search for specific causes of diseases, the mind of the practititioner has been directed more and more to the search for specific remedies for each disease, and the chemist has lost no time in supplying him with an almost endless variety of antiseptics, germicides, antipyretics, and antidotes; and when these were not found in sufficient variety among the active principles of vegetable remedies and the inorganic compounds, he has reversed his ordinary processes and begun to manufacture, synthetically, a prolific series of complex organic compounds each claimed to possess such qualities as fit it for specifically controlling some one or two important symptoms of disease, more especially pain and heat—analgesic and antipyretic.

So greatly have these tendencies influenced a large proportion of practitioners that much of the bed-side practice, especially in reference to the treatment of acute general diseases, has become little more than a clerical process. To note daily the line of *temperature* as indicated by the clinical thermometer and adjust the quantity of the favorite antipyretic in accordance therewith, and see that the patient has plenty of liquid food slightly seasoned with some alcoholic liquid at first, but steadily increased as the disease progresses, constitutes the routine; but little attention being given to the condition of the important secretory and excretory organs, to the varying conditions of vital processes in different stages of disease, or even to local pathological changes that are liable to take place in the progress of all general fevers.

If it were true that simple elevation of temperature constituted a general fever or any form of acute general disease, and that the general molecular degenerations were caused by the high temperature, as claimed by some, and even that the intestinal and other local lesions were only the

result of Nature's, so-called, effort to expel the offending material or specific cause from the system, then certainly, to note the temperature and skilfully to adjust the antipyretics with nourishment would constitute the chief duty of the physician at the bedside of his patient; and his success would depend mainly upon the accuracy of his thermometric observations and the efficiency of his antipyretics.

But abundant clinical facts, carefully observed and accurately recorded, show with the clearness of a mathematical demonstration that a general fever, instead of being simply high temperature, is a complex morbid condition involving coincident disturbances of the properties of living matter and of the metabolic or molecular movements constituting assimilation, nutrition, secretion, disintegration and excretion; the elevation or depression of temperature being only one of the many symptoms of more or less importance resulting from such complex disturbance. This is sufficiently proved by the familiar fact that though we reduce the febrile temperature three or even six times a day with our antipyretics, it rises again just as often until it has become a generally recognized fact that this class of remedies exert little or no influence on the duration of the general disease. A striking illustration of this is furnished by the statistics obtained by Dr. Hood from the records of the St. Bartholomew's and Guy's Hospitals relating to the treatment of acute articular rheumatism or rheumatic fever. In these two hospitals he found recorded over 2,000 cases, 800 of which had been treated before the introduction of salicyl compounds, antipyrin, acetanilid, salol, etc., in the treatment of febrile diseases, and the remaining 1,200 since these became the leading remedies used. By a careful analysis of these cases as recorded, Dr. Hood shows that, while the use of the class of remedies just named, afforded the patient much earlier relief from pain and lessened the temperature, it resulted in neither shortening the duration of the disease, nor lessening the number of cardiac complications or the frequency of relapses. My own clinical observations both in private practice and hospital wards, have shown that the use of the same remedies in the treatment of typhoid fever, for the control of temperature from day to day in antipyretic doses, not only does not lessen the duration of the disease but it directly increases the tendency to impairment of the respiratory function, to the much dreaded cardiac weakness, and to the supervention of sudden and unexpected collapse after the middle period of the disease. And I have been unable to find anything in the medical literature of the past few years showing that the very general use of the antipyretics under consideration in the treatment of continued fevers, had resulted in either lessening the ratio of mortality or their duration, but rather the reverse.

It is obvious, therefore, that the real value of any remedy in the treatment of acute general diseases cannot be determined by its specific effect in temporarily controlling one or two prominent symptoms, but the mode of its action on the elements of the blood, on the molecular movements in the tissues and secreting structures, and on the nervous centres, must be ascertained with a reasonable degree of certainty. If it should be found that a given antipyretic and analgesic remedy relieved pain and diminished temperature by producing a direct sedative or depressing influence on the sensory, vaso-motor and trophic or heat centers of the nervous system, or by such direct effect upon the hæmoglobin or corpuscular elements of the blood as to lessen the oxygenation and decarbonization of that fluid, it is evident that its continued use from day to day through one, two or three weeks would increase the danger of parenchymatous degenerations, exhaustion, blood impoverishment and collapse; or a protracted convalescence and imperfect recovery—effects very poorly compensated by the diminished temperature and less restlessness induced by it. Physiological investigation long since demonstrated the important fact that all nerve sensibility and all metabolic or molecular changes in the living body were dependent on the presence of arterial blood containing oxygen; and later investigations have equally demonstrated that the temperature of the living body is maintained at a given normal standard by the balance between the anabolic or constructive molecular changes as heat producing, and the katabolic or retrograde and eliminative changes as heat discharging, processes, both subject to more or less modifying influence by the vaso-motor or the heat centres of the nervous system. When these several processes maintain their normal relative activity the temperature remains natural. But if the anabolic processes are diminished or increased while the katabolic changes remain natural, the temperature will fall or rise accordingly; and the same will be true if the katabolic processes diminish or increase while the anabolism remains normal. I may safely assume, therefore, that all acute general diseases or fevers accompanied by abnormal temperature, include as an essential part of their pathological processes, profound disturbance of these intricate metabolic processes in some direction; the particular direction being determined by the nature of the special cause or causes of such form of disease.

It is equally safe to assume that all antipyretic remedies produce their effects by either directly or indirectly, increasing the katabolic or heat discharging process, or by diminishing the anabolic changes, or possibly by both. I use the word *indirectly* here, for the reason that a remedy exerting a direct influence on the vaso-motor or heat nerve centers would indirectly influence the gen-

eral temperature chiefly through the heat discharging processes; while a remedy capable of so acting upon the hæmoglobin or corpuscular elements of the blood as to lessen the conversion of the hæmoglobin into oxyhæmoglobin by which the carbon dioxide is discharged and the oxygen received and carried to the systemic capillaries constituting the essential function of respiration, would thereby indirectly retard all the anabolic changes and in doing so lessen heat production. It is evident that a remedy producing its antipyretic effect by the last named method, must be used with great caution and only for limited periods of time, lest while lessening the febrile pyrexia it so far retards metabolism generally as to end in fatal parenchymatous and tissue degenerations. And yet, facts have been rapidly accumulating which render it highly probable that nearly all the complex artificially prepared organic compounds that have been successively urged upon the attention of the practitioner as efficient antipyretic and analgesic remedies during the last few years belong to this class. Abundant clinical observations and numerous experiments on animals by many careful investigators, have shown that salicylic acid and salicylates, antipyrin, kairin, acetanilid, phenacetin, exalgine, etc., all produce their antipyretic and analgesic effects by more or less direct interference with the function of the hæmoglobin of the blood, and a marked depressing or paretic effect on the sensory, vaso-motor and excito-motor nerve centres. Their effect on the corpuscular constituents of the blood is seen in the many cases of profound cyanosis already reported as having occurred during their use as remedies in the treatment of disease; and their equally direct effect on the important centres in the base of the brain and in the medulla oblongata is fairly demonstrated by the experiments of Batten and Bokenham, Botkin and Sawadowski, and others, as well as of their prompt effect in diminishing pain and nervous excitability. Their marked effect in impairing the assimilative and general metabolic processes is shown by the diminished conversion of glycogen into sugar in the liver and the muscles, as proved by Lepine and Porteret; the decided diminution in the products of nitrogenous elimination, more especially of the urea, the sulphates and phosphates; and the reduction of the mammary secretion during lactation.

The very interesting series of observations made by Riess, during the administration of antipyrin in typhoid fever, seemed to prove conclusively that the drug held in check some of the most important metabolic changes to a remarkable extent. Not only was the excretion of urea greatly diminished, but all the solid constituents of the urine were diminished, and the total quantity of urine also, to a greater extent than could be explained by the increase of cutaneous exhalation (see Dr. Cash's address).

The foregoing clinical and experimental facts, with many others that might be cited, did time permit, demonstrate that all the artificially prepared and chemically complex antipyretics recently brought into such general use are not merely antipyretics and analgesics, that is, capable of promptly controlling pyrexia and pain, but also that they are equally active retarders of nutritive and tissue metabolism, and depressants of nerve force and sensibility. In other words, their antipyretic and analgesic effects are produced by their interference with the most important metabolic processes and nervous functions on which heat production and nerve sensibility depends. The logical and necessary inference is that they cannot be used in doses sufficient for efficient antipyretic effect continuously for any considerable length of time, without seriously impairing the quality of the blood, the nutritive or general metabolic processes, and depressing the vaso-motor, cardiac and sensory nerve functions. For temporary relief in many neuralgic and spasmodic affections, and the early mitigation of pain and high temperature during the first two, three, or at most four days, of such excessively painful and active general febrile affections as acute articular rheumatism and dengue, they serve an excellent purpose by greatly lessening the suffering of the patients while they are being brought under the influence of other remedies of more curative value.

But in the group of general acute diseases, of which typhoid fever is the most important example, arising from special causes that from the beginning lessen the sensibility and natural activity of the nervous centres, impair the quality of the blood, and so interfere with tissue metabolism as to cause general molecular degenerations, thereby creating a pyrexia of from two to six weeks' duration, there is no rational indication for the use of this class of remedies. The patients seldom suffer such acute and persistent pain as to demand the use of an analgesic or even an active anodyne. The pyrexia is moderate at first, but advances persistently, and though temporarily controlled by each dose of the antipyrin or acetanilid, it as regularly returns as soon as the force of the dose is expended. Hence, to continue the desired reduction of temperature the antipyretic dose must be repeated from two to three times in the twenty-four hours, and if this is done before the natural time for commencing defervescence or approach of convalescence, the antipyretic has added so much to the impairment of respiratory and cardiac nerve force, as well as to the molecular tissue and blood degenerations naturally caused by the special cause or causes of the disease, that in very many cases a dangerous, and sometimes a fatal, degree of prostration rather suddenly supervenes some time during the third week of the disease, characterized by a frequent and weak

pulse, inefficient respiratory movements from rapidly increasing hypostatic pulmonary engorgement, a dingy or leaden hue of the surface, with sweating, impairment of the special senses, with mental apathy, and some impairment of the action of the bladder and rectum.

It being generally conceded that the natural heat discharging processes are radiation, cutaneous and pulmonary exhalations, and evacuations generally, it seems to me far more safe, in all the typhoid and lower grades of continued fevers, to relieve the excess of heat by increasing these natural processes, than by any remedies that endanger increased blood and tissue degenerations and depression of nerve force. Ample experience has demonstrated that this can be efficiently done by frequent sponge bathing with water at such temperature as is most agreeable to the patient, aided in extreme pyrexia by wrapping the patient in the cold wet sheet a few times, which can be done not only without danger of causing depression, but with a positively refreshing influence.

I am constrained, from a sense of duty, to add some comments on the *modus operandi* of another remedy extensively used in medical practice, and especially in the treatment of continued fevers. From the length of time it has been in use and the large amount used it would seem that its physiological and therapeutic effects should have been fully demonstrated long before this time. Instead of this, however, these effects still elicit expressions of opinion and modes of practice of the most varied and contradictory character. I allude to alcohol as it exists in the various fermented and distilled liquors, and exclusively as used as a remedy in the treatment of disease. Instead of spending your time on a history of the various opinions and investigations pertaining to this subject, I shall invite your attention directly to as concise answers as possible to the two following questions, viz.: What are the effects of alcohol on the functions of the more important organs and upon the constituents of the blood and tissues of the living body? What are the therapeutic indications it is capable of fulfilling in the treatment of diseases, more especially of general fevers?

In answering the first question it may be stated that alcohol, when taken into the stomach in a diluted form, undergoes no gastric digestion, but is rapidly absorbed and carried directly into the venous blood, and through it reaches first the liver and the lungs, and from thence, in the arterial blood, it is carried to every organ and tissue of the body, and some part of it is speedily eliminated, unchanged, through the lungs, kidneys and skin. This much appears settled beyond further controversy. But what becomes of the large part that cannot be recovered through the excretions and exhalations, and what effect is produced by its presence, on the constituents of the blood, on the functions of the brain and nerves, on the metabolic processes, and on the temperature of the body?

The experiments of Schulinus and Salzynski show conclusively that about ten per cent. of the alcohol taken disappears, or at least loses its identity immediately on mingling with the blood. If this sudden disappearance of 10 per cent. of the alcohol was caused by its immediate oxidation, an ordinary dose could not fail to quickly increase the heat production and proportionately increase the resulting carbon-dioxide and water. According to the accepted formula, the complete oxidation of 1 gram of absolute alcohol liberates 9 kilogram degrees of heat. Therefore, if 20 grams of alcohol were introduced into the blood of an individual, and one-tenth, or 2 grams, immediately disappear by oxidation, 18 kilogram degrees of heat should be at once added to the temperature of that fluid, with a corresponding increase in the production of carbon-dioxide and water. And if only from 2.5 to 15 per cent. was subsequently eliminated unchanged, as claimed by numerous experimenters, leaving about 17 grams of the alcohol to disappear by subsequent oxidation during the next few hours, it should liberate 153 kilogram degrees of heat more with its resultants, carbon-dioxide and water. But a careful review of all the experimentation upon this subject shows no evidence of such marked increase in either heat production or in carbon-dioxide by the presence of alcohol in the blood. On the contrary, the most recent and accurately conducted experiments of Dr. Edward T. Reichert, Professor of Physiology in the University of Pennsylvania (see *Therapeutic Gazette*, Feb. 15, 1890), show results decidedly the reverse. He performed eighteen experiments on dogs with the aid of an improved calorimeter, by which he determined the rate of both heat production and heat dissipation with the actual temperature of the animal for six consecutive hours after the administration of a given quantity of alcohol proportioned to the weight of the animal.

In sixteen of the eighteen experiments the average heat dissipation exceeded the heat production and the temperature was lowered; in only two was a reverse result obtained. In thirteen of the eighteen experiments the average heat production was diminished, while in the other five it was increased. In all but two of the experiments the average heat dissipation was also diminished, in a less ratio, however, than the diminution of heat production, and the actual resulting temperature of the animal was lowered. Dr. Reichert, during these very valuable experiments, took no note of the variations in the production of carbon-dioxide, but the aggregate results of both experimental and clinical observations during the last half century sufficiently demonstrate the fact that the production of car-

bon-dioxide, urea, phosphates, and nearly all other excretory products of metabolism or retrograde metamorphosis, and the consumption of oxygen, are diminished by the presence of alcohol in the blood.

The suggestion of Dr. Reichert and many others, that the alcohol while undergoing actual oxidation in the blood, producing both heat and carbon-dioxide, with consumption of oxygen, simultaneously diminishes the metabolism of the tissues so much that the production of both heat and carbon-dioxide from that source is so far diminished as to balance, or more than balance, the increase of these by the direct oxidation of the alcohol, does not afford a satisfactory explanation.

If, as has been demonstrated, one-tenth or more of the alcohol taken into the blood *immediately* disappears, and such disappearance is caused by an equally sudden oxidation, the increased quantity of heat and carbon-dioxide thus liberated could not escape ready detection before it could be counterbalanced either by diminished heat production from retarded tissue metabolism, or from increased heat dissipation.

And yet, neither the aggregate results of the numerous and varied experiments, nor of the abundant clinical observations, show any such primary marked increase in either the consumption of oxygen or increase of carbon-dioxide and heat. That when alcohol enters the blood diluted with water it rapidly disappears or loses its identity, there is no reason to doubt. That while present and circulating with the blood it diminishes nerve sensibility and force, lessens the average temperature, retards metabolism or molecular changes in the tissues, and lessens the aggregate of effete eliminations, is equally certain. How it disappears—what new combinations it enters into by which its identity as alcohol is lost—and how it modifies nearly all the processes and functions of the living system, are questions of the greatest importance. The element or idea that has hitherto vitiated nearly all the reasoning and deductions from the numerous clearly established facts developed by the investigations has been the purely theoretical assumption that alcohol, being a pure hydrocarbon, could undergo no change or combination in the laboratory of the living body save that of oxidation or combustion and the evolution of heat or some kind of force. Under the influence of this primary assumption each chemico-physiological investigator, though acknowledging that the presence of alcohol in the blood actually diminishes nerve force, muscular force, metabolic force, heat force, and the ordinary products of oxidation, still returns to the theoretical idea that, inasmuch as the alcohol disappears in the system, "it must undergo oxidation and evolve some kind of force." The well-known fact that alcohol possesses a strong affinity for the water and albumen of the living tissues and for the hæmoglobin and corpuscular elements of the blood, and is capable of exerting a modifying influence on the molecular condition of all these elements, seems to have received far less attention than its importance demands.

Dr. B. W. Richardson, of London, first pointed out the fact that the presence of alcohol in the blood caused alterations in the appearance of the corpuscles, causing them to become corrugated to some extent, and more disposed to adhere together.

Dr. George Harley further showed that the addition of 10 per cent. of alcohol to fresh arterial blood changed its color, prevented its re-oxygenation and destroyed its power of producing hemin crystals. The addition of 5 per cent. did not materially change the color, but it completely destroyed the capacity of the corpuscles for further oxygenation or purposes of nutrition.

Dr. Joseph Frank Payne, Vice-President of the London Pathological Society, in opening an important discussion of the subject by that body in January, 1889, stated that alcohol, when taken internally, not only speedily produced derangements of the nervous functions, but also acted directly on the tissue elements, "(1) as a functional poison, (2) as a tissue poison or destructive, (3) as a checker of oxidation." And when its action becomes persistent, or chronic, it results in hyperplasia of connective tissue, fibroid changes, fatty and tuberculous degenerations, and fatty infiltrations in almost every tissue and organ in the body. Both Dr. Payne and Dr. Lionel Beale presented microscopical sections of a liver changed by chronic alcoholism, showing not only hyperplasia of connective tissue, but also essential atrophy of the liver cells. For the purpose of gaining more knowledge concerning the action of alcohol on the hæmoglobin, and its relation to the oxygen of the blood, Dr. John D. Kales, Demonstrator of Histology in the laboratories of the medical department of the Northwestern University (Chicago Medical College), executed a series of observations with the spectroscope and microscope on blood drawn by hypodermic syringe from the heart of living rabbits and mixed with alcohol in varying proportions, from 1 to 10 per cent. of the latter. He found that when absolute alcohol in varying quantities, from 1 to 5 per cent., was mixed with the freshly drawn blood diluted with distilled water, it made no perceptible change in the oxyhæmoglobin spectral bands at ordinary atmospheric pressure and a temperature of 98° F. Neither was there any evidence of oxidation of the alcohol. But when the pressure was diminished by means of the air pump to the extent of 710 millimetres of mercury the hæmoglobin was rapidly reduced by surrendering its oxygen, which did not combine with the elements of the alcohol present, but escaped in a free state. It was further shown that the

rapidity of the reduction of the hæmoglobin increased by increasing the proportion of alcohol used. Also, when the oxyhæmoglobin was reduced in contact with the alcohol, it was less capable of re-oxygenation than when reduced without the presence of the alcohol.

As the experiments of Dr. Kales constitute an interesting item of original work, I take the liberty to append his own concise report of the same to this address.

In view of all the foregoing facts I feel justified in considering the following propositions fairly established:

1. Alcohol, when present in the blood, either combines with or causes changes in the molecular composition of the hæmoglobin, by which the natural conversion of the latter into oxyhæmoglobin is diminished, and consequently less oxygen is carried from the pulmonary to the systemic capillaries.

2. The same strong affinity of the alcohol for water and albuminoids that enables it to modify the composition and function of the hæmoglobin of the blood, also causes it to modify the molecular condition and functions of the tissue cells throughout the body, and thereby retard or lessen the aggregate of metabolic changes and their products, as shown in the diminished product of carbon-dioxide, urea, phosphates, heat, etc.

3. Both the direct effect of the alcohol on the nerve cells, and its indirect effect in lessening the amount of oxygenation of the blood, causes it to produce marked diminution of nerve sensibility and vaso-motor nerve force; or, in other words, a true anæsthetic effect upon the nerve centres.

4. It follows as a necessary conclusion from the three preceding propositions that instead of generating any kind or form of force or energy, alcohol in the blood actually diminishes every known form of force belonging to the living body; and instead of conserving the tissues, it diminishes and prevents the metabolic changes, and thereby promotes both molecular and tissue degenerations, as so uniformly seen resulting from chronic alcoholism.

Like antipyrin and other members of the group of antipyretics on which I have ventured to comment, the alcohol acts directly on the corpuscular elements of the blood, and so far diminishes the molecular tissue movements of nutrition and disintegration as to lessen heat production and favor tissue degeneration, while its action on the nerve structures is more in the direction of an anæsthetic than of an analgesic.

And hence like them, if administered in acute general diseases, by its anæsthetic properties it quiets the patient's restlessness, lessens his consciousness of suffering, and diminishes vaso-motor and excito-motor nerve force, with moderate reduction of temperature; while by its direct diminution of tissue metabolism and excretory products it favors the retention in the system of both the specific causes of disease and the natural excretory materials that should have been eliminated. And though the immediate effect is to give the patient an appearance of more comfort, the continued retention of the morbific cause, the diminished action of the excretory structures, and the diminution of oxyhæmoglobin, all serve to protract the disease and increase molecular and tissue degeneration and add to the number of fatal results.

I am well aware that the foregoing practical deductions, founded on the results of numerous and varied experimental researches and well known physiological laws, are in direct conflict with the very generally accepted doctrine that alcohol is a cardiac tonic, capable of increasing the force and efficiency of the circulation, and of conserving the normal living tissues, and, therefore, of decided value, especially in all the lower grades of general fever. But on what series of well established facts does this "very generally accepted doctrine" rest? Certainly not on any resulting from direct experiments on either animals or man in health, for all these result in showing depression of the vaso-motor and heat centres of the brain, and impairment of cardiac force in direct proportion to the quantity of alcohol in the blood. (See experiments of Drs. Martin, Ringer and Sainsbury, Reichert, and others.) Many of you are doubtless ready to say that it rests on a broad basis of direct clinical experience; but reliable results from clinical experience in the use of a remedy in the treatment of any disease can only be gained by comparing the results of an adequate number of cases in which it was used, with the results of a like number of parallel cases treated in the same manner, except with the remedy omitted. The nearest approach to such a basis for comparison that is found on record is furnished in the reports of hospital and private practice for a given period, where in certain acute general diseases alcoholic remedies were either not given or used very sparingly, and before the recent antipyretics were manufactured; and similar reports for an equal period of time when in the same diseases the antipyretics and alcoholics were freely used. The treatment of typhoid fever and pneumonia, two clearly defined acute diseases of great importance and familiar to all general practitioners, will serve the purposes of my inquiry.

As Dr. George B. Wood, in his well-known work on the Practice of Medicine, recommended the use of alcoholic remedies only in the last stages of typhoid fever, and then chiefly in the form of wine-whey, made from 1 part of sherry wine and 2 parts of milk, given in tablespoonful doses, his results may be fairly placed on the side of non-alcoholic treatment. He has stated that of the whole number of cases treated by him in

the Pennsylvania Hospital from 1850 to 1854, less than 6 per cent., or one in seventeen, died. A more marked and complete experiment was made when, in 1864, the Commissioners of Public Charity of New York City were induced, on account of the great mortality of fever patients in the Bellevue Hospital, and also for better isolation, to commence sending the typhus fever patients to Blackwell's Island, where they were placed in canvas tents under the immediate charge of Dr. A. L. Loomis. At the end of nine months the average number constantly under treatment had been seventy, or about 600 in all. Their treatment had been exclusively hygienic, consisting of ample ventilation, good air, cleanliness, and simple nourishment. No medicines and no alcoholic stimulants were used. The result was one death in seventeen cases, or only 6 per cent. (See letter of New York Correspondent in *Chicago Medical Examiner*, Vol. vi, p. 79.) In 1869, the present large building was erected to accommodate the Mercy Hospital, of Chicago. With the exception of one year, I had continuous charge of the medical wards, including rather more than half of the typhoid and other fever patients, from that time until 1886; and since the last date Dr. N. S. Davis, Jr., has divided the time with me. During these twenty years the number of typhoid fever patients admitted and treated in the wards under my charge annually, has varied from thirty to 100, making a total of more than 1,000 cases. Much the larger proportion were from the class of common laborers, and they seldom reached the hospital until in the second week in the progress of the disease, and a considerable number not until in the third week. During this whole period of time, the use of alcoholic remedies, both fermented and distilled, has been rigidly avoided in the treatment of this class of patients. The administration of the most popular internal antipyretics, antipyrin and antifebrin, was commenced by my colleague in charge of the wards, and given a fair trial during the last three years. But the cases so treated resulted in so decided an increase in the ratio of mortality, that he abandoned their use in the treatment of this variety of fever. The actual ratio of mortality for the whole number of cases treated during the twenty years was 5 per cent., or one in twenty cases; the highest ratio in any one year being one in fifteen, and the lowest one in thirty.

On the other hand, nearly all the reports from the principal hospitals, both of Europe and this country, in which alcoholic liquors are freely used in the treatment of typhoid and typhus fevers, the ratio of mortality is given at from 16 to 25 per cent., or one death in from four to seven cases.

As examples, during the three years immediately preceding the sending of typhus patients to the tents on Blackwell's Island in 1864, 908 cases had been admitted into Bellevue Hospital and treated by a liberal administration of alcoholic remedies, chiefly brandy, whisky and wines, resulting in 198 deaths, or one in four and one-half. By eliminating the number who died within forty-eight hours after admission as not really subjects of treatment, the real ratio of mortality was about one in six.

From a paper read by E. T. Edgerly, M.D., before the Clinical Society of Cook County Hospital, Chicago, February 6, 1890, we learn that 161 cases of typhoid fever had been treated in the regular medical wards of that hospital during the year 1889, of whom 110 were males, and fifty-one females. Among the remedies usually used were mentioned antipyrin and antifebrin as antipyretics, and alcohol as a stimulant. The number of deaths was twenty-seven, or one in six cases, *i. e.*, about the same as obtained in Bellevue twenty years before the internal antipyretics had been manufactured.

The official annual report of the Cincinnati Hospital for the year 1886, states that forty-seven cases of typhoid fever were treated during the year, of which seven died, or one in 6.7. In the report of the Garfield Memorial Hospital at Washington for the year 1889, the number of typhoid fever patients admitted is stated at twenty-two, of whom five died, or one in 4.4.

The foregoing clinical statistics are sufficient to show that the ordinary use of alcoholics and the more recent internal antipyretic remedies in the treatment of typhoid fever pretty uniformly results in one death for every four to seven cases treated; while cases of the same fever treated without any use of these remedies result in only one death for every seventeen to twenty cases.

So far as I have been able to gather reliable clinical data for comparing the results of the treatment of pneumonia, or as it is more generally called pneumonic fever, by the very general use of antipyrin, antifebrin, etc., for controlling the high temperature, and alcoholic liquors as cardiac tonics, with cases of the same disease treated without the use of any of these remedies, they show equally striking and important differences. Thus, the *Medical News*, of Philadelphia, December 11, 1886, stated that "the ratio of mortality from pneumonia in the large general hospitals of this country is rarely below, more often above, 25 per cent." In the Pennsylvania Hospital during the years 1884–85–86, the number of cases of pneumonia treated was eighty-eight, with thirty deaths, or 34 per cent. In the same hospital during the years 1845–46–47, the number treated was twenty-five, with four deaths, or 16 per cent.; less than half the ratio of the recent period (Osler).

The statistics of 1,000 cases of lobar pneumonia treated in the Massachusetts General Hospital, Boston, from 1822 to 1889, as compiled by Drs. C. W. Townsend and A. Corlidge, Jr., give an average mortality for the whole period of 25

per cent. But dividing the time into decennial periods, they state that "the mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade." In the annual report of the Supervising Surgeon-General of the U. S. Marine-Hospital Service for 1888, it is stated that the whole number of cases of pneumonia treated in the several Marine-Hospitals, under that Service, from 1880 to 1887, inclusive, was 1,649, of which 311 died, or 18.8 per cent.

In the Cincinnati Hospital report for 1886, the number of cases of lobar pneumonia treated is stated at forty-two, of which sixteen died, or 38 per cent. Dr. Ludwig Hektoen reports, as treated in the Cook County Hospital, Chicago, during 1889, of lobar pneumonia seventy-six cases and of lobular pneumonia four cases—total eighty cases, of which twenty-nine died, or 36 per cent. Dr. C. W. McIntyre, house physician, reports fourteen cases of pneumonia treated in my half of the medical wards of the Mercy Hospital, Chicago, during the year 1889, of which one died. In the same wards of that hospital during the last ten years, the average ratio of deaths from pneumonia has been about 12 per cent. No alcoholic and very little internal antipyretic remedies have been used in the treatment.

I am well aware that the foregoing fragmentary statistics in regard to both typhoid fever and pneumonia, afford no adequate or reliable basis for determining the value of different modes of treating these important diseases; and I have cited them for no such purpose. But I have simply copied them from such sources as were at hand, to show, first, that the very general use of the complex artificially formed antipyretics (antipyrin, etc.), in the treatment of continued fevers, including pneumonia, in addition to the liberal use of alcoholic (so-called) stimulants, has not been accompanied by any decrease in the ratio of mortality or in the duration of these diseases. On the contrary, so far as they show any change it is in the direction of increase in both particulars. And second, so far as they include results obtained by treating many cases of the same forms of disease without any use of the remedies named, the ratio of mortality has been reduced in so marked a degree, as to force the conviction that their use in the treatment would have been positively injurious. Consequently our appeal from the clearly established deductions from direct experiments concerning the physiological and pathological action of the remedies under consideration to the domain of clinical experience in their use shows, instead of conflict, entire harmony in the results.

Mere theoretical opinions have ever exerted a dominating, and often an injurious influence over the administration of remedies in the treatment of disease; and the present decade of time shows no exception to this rule.

The theoretical dogma that all disease consisted in primary irritation, and the maxim, *ubi irritatio ubi fluxus*, that led, during the last part of the last century, to the rigid antiphlogistic system of treatment, with bleeding, evacuants and low diet for its basis, was not enforced with more magisterial authority for the greater part of the first half of the present century—or until it was overthrown by its own excesses—than did the equally theoretical assumption following it, that all disease is debility or diminution of life (Chambers), and all acute diseases must run their course, establish and enforce the practice of supporting the patient by food and so-called stimulants until the disease had completed its course which still holds sway, though being rapidly undermined by the recent antipyretic theories and the still more recent discoveries in etiology, relating to specific causes and specific remedies. Therefore, to-day, we are still endeavoring to support our patients with food, fresh air, and alcoholics; while we combat the pyrexia, and attempt to nullify the specific causes, with larger and more dangerous doses of medicine than were given in the most heroic period of the antiphlogistic system. In other words, while we are, with great propriety, insisting that our fever patients must have proper food and the most free access to pure air, we are giving them such doses of alcohol and internal antipyretics as directly diminish the capacity of the hæmoglobin to use the air, and so far diminish the metabolic tissue changes as to retard the normal appropriation of the food, while they equally depress the vaso-motor and respiratory nerve functions. Need we be surprised, therefore, that the results show an increasing rather than a decreasing mortality? The fundamental error consists in using special remedies for the control of particular symptoms, or the removal of specific causes, without an adequate knowledge of their influence on the blood and the various processes and functions of the living body.

If we would reach the highest degree of success in the treatment of acute general diseases, we must keep distinctly in mind the following propositions: 1. We must as early as practicable separate the patient from the further action of both the specific and predisposing causes of his disease by surrounding him with pure air and as perfect sanitary conditions as possible; and as the living animal system uniformly tends to either destroy or eliminate the specific morbific causes by its own metabolic changes, we should carefully avoid the use of such remedies as either directly or indirectly retard or prevent such normal metabolic processes, even for the repression of one or more prominent symptoms. On the contrary, we must use such general alterative and antiseptic remedies as are known to sustain and correct such processes, and thereby aid in hastening the destruction or elimination of the disturbing *materies morbi*, whether they consist of living germs, chemical ptomaines or leucomaines, or

only excretory matters abnormally retained in the system.

2. As the pyrexia or high temperature results mostly from interference with the processes of heat dissipation, especially in the ordinary continued fevers, we must further aid in restoring these processes by gently promoting natural elimination and the direct abstraction of heat by sponge baths, and in excessive cases by wrapping in the cold wet sheet, all of which exert a restorative influence on the vaso-motor, cardiac, and respiratory nerve centres, while, with equal care, we avoid administering such doses of internal antipyretics and alcoholics as diminish heat production by retarding both blood and tissue metabolism, and equally depress nerve sensibility and force.

3. Again, as every specific cause capable of producing the complex assemblage of morbid phenomena that constitute a general fever, has displayed a tendency to induce special local morbid conditions in some one or more of the important tissues or organs during the progress of the general disease, as in the glands of the ilium, mesentery and spleen in typhoid; the stomach, duodenum and liver in periodical and yellow fevers, etc., we must early and accurately use such remedies as palliate or modify these local developments wherever they may be manifested, and thereby prevent such structural changes in these directions as might otherwise end in fatal exhaustion.

4. Finally, as all acute morbid processes, when established, are progressive through the successive stages of increase, culmination and decline or destruction of the patient, we must carefully adjust both our remedial agents and nutrient materials to the actual stage of progress of the disease and the capacity of the patient to receive and appropriate the same; ever remembering that the same remedial agent that might be of great value in the first stage, might be injurious or even destructive if used at the stage of culmination, or still more in that of decline. Hence specific remedies for acute general diseases can be rationally or successfully used only when aimed at the destruction or elimination of the specific causes and in the first stage of the morbid processes. Indeed, the chief benefits thus far derived from the use of antiseptics and germicides, have been as preventives in the incubative and prodromic stages, rather than as curatives after active morbid processes have become manifest.

It required much careful clinical observation aided by some analytical and experimental work, during the first thirteen years of my professional life, to gain a clear comprehension of the foregoing general propositions or indications for the management of acute general diseases, but they have served as my general guide during the forty years of constant practice that have intervened since; and with results that have neither diminished my faith in the efficacy of remedial agents when properly used, nor the confidence of the community in which I have continuously lived and practiced the healing art. I do not desire to be understood as persistently using the same remedial agents all these last forty years; but I do mean that the correct principles or indications for the treatment of the different stages of any given disease have remained and always will remain the same; while our choice of individual remedial agents for fulfilling those indications may be influenced by every addition to our knowledge of etiology, materia medica and therapeutics.

If the forgoing review of some of the most important items presented in the field of the practical medicine of the present time, should lead you or any considerable number in the profession, to a closer study and thereby a clearer understanding of the real *modus operandi* of the remedial agents used in the treatment of acute general diseases, I shall be amply repaid for my time and labor, and you will cheerfully excuse me for having trespassed upon your time so long.

ADDRESS ON STATE MEDICINE.

Delivered at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 21, 1890.

BY ALFRED L. CARROLL, M.D.,
OF NEW YORK.

In appearing before you, under the mandate of your committee that I should give an Address on State Medicine, I feel like a culprit about to be tried for obtaining your attention on false pretenses, with the additional discomfort of knowing that the most ingeniously unscrupulous member of the metropolitan Bar could not, by the utmost stretch of his professionally elastic conscience, find aught to plead in my defense. For my crime is deliberate and with malice aforethought.

When I was informed of the duty imposed upon me, I at first contemplated the fulfilment of the task; but considering the portentous range of State Medicine—which embraces all the possible relations of our profession to the commonwealth, including medical jurisprudence, medical legislation of every sort, national or international, and sundry other collateral subjects, beside public hygiene—it became evident that the briefest essay to cover such a field would be somewhat longer than a Mongolian melodrama, which occupies a week or two in its performance, and I feared that after the first forty-eight hours you might begin to grow weary. I therefore determined to confine myself to the comparatively small scope of public sanitary administration; and with this limitation, and sedulous concentration, I may hope to conclude a superficial sketch before a very late bedtime.

To the average intelligence, sanitary science has come to mean only a certain smattering of sanitary engineering, and this solely as regards sewerage and plumbing work; to the exceptionally specialized scientific mind, its definition is conterminous with the artificial cultures and stainings of the bacteriological laboratory. Avoiding these extremes of macro-mechanics and micro-biology, my present purpose is to discuss sanitation as concerning the things which the State may properly do for the preservation of health.

There is a wide difference between what we might do, theoretically, and what we can do, practically; and this difference is not always borne in mind by those who with laudable intentions seek to antedate a hygienic Utopia. We could doubtless abolish communicable diseases by seizing and cremating all infected persons and things simultaneously throughout the world; but it is more than doubtful if the public at large would placidly consent to such a general holocaust. We might theoretically save thousands of infants from falling victims to improper feeding and parental mismanagement, if we could assume supreme control of them; but not even the New York Society for the Prevention of Cruelty to Children has yet proposed to take all babies away from their mothers—its powers being apparently directed to preventing their earning a comfortable livelihood at a later age.

We might stamp out syphilitic infection, if legal restrictions could be made to enter the innermost recesses of private life and preside over all sexual relations; but experience has proven that, although we may vastly diminish the avowed channels of its dissemination, clandestine prostitution and more indirect modes of transmission will foil the completion of our precautionary measures as long as human nature rests upon an anatomical basis. We might even effect a scientifically progressive improvement of mankind, if we could enforce the stirpicultural selection employed by breeders of the lower animals; but the marriageable age is apt to be denominated by sentimental affinities, and the loving fancies of youth's springtide are beyond the reach of our autumnal philosophy. An absolutely rigorous Chinese-wall quarantine of exclusion, if it were possible, might work preventive wonders; but in the needs of civilized communities some commercial interests are even more important than the dangers which may accompany them, and while waiting for the altruistic sanitary millennium when exportation rather than importation of disease will be checked, our principal safeguard must lie in the abatement of the local insanitary conditions which furnish a soil for the implantation and multiplication of the *materies morbi*. Medical inspection and isolation of the infectively sick, with disinfection of contaminated things, will always be prudent; but the antiquated mockery of quarantines is as ineffectual as it is vexatious, and must ere long be abandoned by all intelligent nations.

Since the days of the old Crusades, fanaticism has played a stimulating part in the inception of great enterprises, and now, as then, in all new efforts to promote the general weal, unbridled energy tends to overleap the bounds of wisdom, and sometimes needs restraint. In our modern crusade for the glorification of the Temple of Health, the campaign was sagely outlined by such great chieftains as Chadwick, Farr, Parkes, Simon, and others; yet lesser leaders of brigades or companies are here and there found, whose impulsive valor outstrips discretion, and not only embitters the antagonism of our foes, but impedes the advance of our standard. To drop the metaphor, we should remember that sanitary science is still in its infancy, and that until our knowledge of etiology shall be far more certain, we must be cautious lest undigested dogmatism, founded on hypotheses, arouse opposition and ridicule from the people whom we wish to benefit. Even now, under enactments which in several of our States make health-boards legislative bodies, and exempt their decisions from appeal or review, hard and fast rules are often framed from individual opinions, unsupported by demonstrable facts, and things are done which would hardly be tolerated elsewhere. Under a constitutional monarchy, the "liberty of the subject" must be maintained; but as we are all sovereigns here, there are no "subjects" to protest, and consequently no personal rights which any officials, from policemen down to State legislators, are bound to respect; the theory of our democratic system apparently presupposing that a public appointment necessarily carries with it the sudden inspiration of perfect wisdom, unbiased by any previous study of the scientific problems involved. In villages, where health-boards of laymen are appointed from year to year by not always sapient trustees; in rural townships, where supervisors and justices of the peace constitute, ex-officio, the local boards—even in cities wherein political considerations are not altogether dissociated from sanitary organizations—a little knowledge may be a dangerous thing when clothed with brief authority, and is almost sure to be an obstacle to advancement of understanding or improvement of methods.

The proper function of sanitary boards in their relation to the affairs of individuals is to prohibit or abate whatever is unmistakably perilous to public health, not to assume a finality of dictation. In their supervisory capacity, it is within their legitimate province to see that architectural and engineering plans, in respect of domiciliary drainage, refuse-disposal, and other essentials for human habitation, satisfy the sanitary require-

ments whereon all authorities are agreed; but the diversities of opinion among experts in the constructive arts as to the best manner of mechanically satisfying these requirements, testify to the unwisdom of insisting upon particular specifications. As an abstract proposition, we may admit that a room devoid of cornice, carpet, curtains, upholstered furniture, or other lodging place for possibly infected dust, would be most easily kept in hygienic safety; it has not, however, thus far been seriously proposed to deprive luxury-loving millionnaires of their esthetic decorations and multitudinous bric-a-brac, and to confine them to four plain walls and a bare floor, with a few hard wood chairs, and an iron bedstead for all equipment—although it has been officially urged that consumptive invalids should be so unornately housed, and although, in sundry places, alcoves and other irregularities in the shape of apartments are proscribed by formal resolution, while school children are left with a hundred cubic feet of space per capita. In my own enlightened metropolis—where, by a singular exercise of legislative omniscience, the President of the Health Department must not be a physician, and the medical member of the commission is in the position of a vulgar fraction with an insignificant denominator—no unofficial citizen, be he never so skilled in sanitary theory and practice, may let his invention transcend certain established rules, though he build solely for his own residence. Some of you may remember that in the International Health Exhibition at London, in 1884, there was shown a model "sanitary house," constructed under the special joint supervision of the best known practical sanitarians in England. It is human to err, and of course no scheme can be so perfect as to escape criticism in some details; but one might at least suppose that men of such repute as Corfield, Douglas Galton, Rogers Field, and Ernest Turner, could be trusted to plan a simple edifice which would not gravely threaten the lives of its inmates. Nevertheless, one of the most competent inspectors of our Health Department told me that under the regulations of the board, the erection of such a house would not be permitted in New York. Per contra, some of the plumbing specifications inflexibly ordained in several of our cities are distrusted, if not condemned, by sanitarians abroad.

To define more clearly my meaning as regards interference in private life: While I concede the necessity of giving to boards of health discretionary control over many things which cannot be foreseen, and which "in their judgment" are "detrimental to public health," I submit that such judgment should be founded on undeniable facts, and that the "police power" of the Legislature, which is delegated to these boards for an explicitly circumscribed purpose, can equitably supersede written law only in cases of "dire emergency." I do not wish to contend for the right of the individual to injure his own health, much less to do aught which injures the health of his neighbors; but I do insist that we should be very sure that our favorite way of attempting to solve a given problem is the only safe way, before we force him to adopt it; and I more than doubt the justifiability of preventing him from eating oleomargarin or drinking skimmed milk, if he knowingly choose to do so. It should be remembered that in all sanitary legislation danger to "public health" is the fundamental reason and excuse for official intervention. With this in view, domiciliary intrusion may be requisite to abate conditions which can extend their baleful effects to the surrounding population; a pardonable latitude of interpretation may enable us to protect minors and other persons incapable of protecting themselves from manifestly deleterious influences, forasmuch as the future, if not the present, sanitary welfare of the community is therein concerned; but ours is not a paternal government, and the widest liberty of judgment and action consistent with public safety is the birthright of every citizen.

It is everywhere the tendency of humanity to exaggerate possibilities into probabilities, and probabilities into certainties, and in this country, more than in most others, there is an intolerance of dissent, inherited, perhaps, from the early Puritanical settlers, whose claim to rule themselves included incidentally power to rule everybody else. The average American is loth to accept other people's ideas; but when he evolves from his inner consciousness one of his own—whether it concern total abstinence or the public necessity of hops in beer, the cruelty of putting a turtle on its back or the morality of theatrical posters, the encouragement of charlatanism or the suppression of cigarettes—is usually impelled to rush incontinently to his State Legislature with a Bill to compel all his compatriots to live according to his private opinions; and if there be enough of him to suggest a captivable "floating vote" or an opportunity for "protection" of some local industry, the chances are that his Bill will become an Act, with an amendment authorizing the construction of a railway from nowhence to nowhither, or the incorporation of a politically assessable "trust." As a result, we have a statutory hodge-podge, going too far in one direction, not far enough in another; here dividing inseparable duties between antagonistic bureaus, there imposing incongruous obligations upon a single department; leading sometimes on the one hand, to inefficiency, and on the other, to an excess of authority little short of despotism.

The sanitary duties of the State to the public consist in protecting the purity of soil, air, water, and food, and guarding against the propagation

of preventable disease, as far as may be practicable. In urban communities, these duties involve drainage, paving and cleansing of streets, an adequate system of sewerage and scavenging, and a sufficient and wholesome water supply, as well as the supervision of food-purveying and the abatement of certain nuisances. In most cities, however, the principal parts of municipal hygiene are assigned to independent boards, organized chiefly for the benefit of practical politicians and contractors. Drainage, like the snakes in Ireland, is conspicuous by its absence; with a very few honorable exceptions, our pavements are examples of what should be avoided, and their cleansing is left to the casual operation of natural laws; sewerage and the ultimate disposal of sewage are oftener productive of mischief than of safety; scavenging affords an unearned increment of income to numerous exiles from verdant Erin or sunny Italy; and of the sources of water supply to many of our municipalities, if the reports of chemists and inspectors are to be believed, the less said the better, out of consideration for the sensitive susceptibilities of "teetotallers." In these matters, sanitary advice is seldom sought, and if proffered, is commonly unheeded.

The dangers from the aggregation of dead bodies in cemeteries and consequent pollution of soil, air, and often of water supply—especially in rapidly growing communities where habitations of the living extend around burial-grounds—have been too often exposed to need recital here; but these are usually chartered evils, hedged about by popular sentiment, and beyond the direct control of boards of health, unless the harm which ought to have been prevented has actually and irremediably occurred. We have not even the statutory limitations of the area and depth of graves and the intervals of reopening, which exist in nearly all European countries; nor can we enforce the salutary provision that when cemeteries are abandoned they shall not be used for dwelling places.

On the other side of the question, boards of health are in many instances charged with, or voluntarily assume, functions foreign to their proper purpose. The examination and licensing of practitioners, and the direction of the curricula of medical schools, howsoever desirable in themselves, pertain to curative rather than to preventive medicine, and would be more appropriately allotted, as they are in older countries, to another department of the State than that which is created to preserve people in health, not to prescribe their treatment when they are ill.

In the registration of vital statistics, again, boards of health are burdened by legislative action with details which in no wise belong to them. The sanitarian is interested in learning how many children of each sex are born, and, in a composite population like ours, the race or nationality from which they spring. He may even take an indirect and somewhat sentimental interest in their legitimacy or illegitimacy, but he cares nothing for their names or those of their parents. He wishes to know the number of deaths at different ages and the causes thereof, as far as the more than occasional incertitude of diagnosis can yield such information; the occupations and local habitations of the decedents also are useful items for his calculations; but with their pedigrees for two or three generations he has no more business than with their bank accounts. All these genealogical particulars, which serve only for the identification of the individual, are of exclusively forensic purport, needful to decide litigations about inheritance of property, and, therefore, of value to citizens with pecuniary expectations and poor relations, but have no more connection with public health than the legal technicalities of drafting a will or framing an indictment. And yet, to enable boards of health to perform such inappropriate work, the already overtaxed physician is often called upon to collect personal biographies and family histories, under penalty of fine or imprisonment if he fail in his capacity as an amateur census taker. If he attend a charity patient in parturition, he is expected to record the names, ages, birthplaces and occupations of both parents, the mother's maiden name, and sundry other domestic circumstances, and, unless an immediate agreement be reached as to the baptism of the infant, to make future unremunerated visits in order to report its prænomen. Similarly, after his professional services have been brought to a close by the death of a client, he is held responsible for the completeness of the record of that client's birth, parentage, social condition, length of residence in his or her last abode, the number of persons living under the same roof, and divers collateral formalities which are equally impertinent, in addition to certifying the cause of the demise. To cap the climax of irrelevancy, sanitary bureaus are required to register full, true and particular accounts of all persons entering the estate of wedlock, for which accounts they are empowered to exercise compulsion on clergymen and magistrates, notwithstanding that in the State where this enactment originated neither a civil nor a religious ceremony is necessary to constitute a lawful marriage, and that the Act which imposes such clerical eccentricities was titularly one "for the preservation of the public health."

Aside from the evident injustice of demanding from medical practitioners unpaid services outside of their vocation, some of the methods adopted tend to defeat their own purposes. For the registration of births reliance has been virtually placed upon the obstetrician alone; but in the population at large nearly half of these events occur without

medical attendance, under the covert auspices of unqualified midwives as ignorant of law as of physic, or frequently among pluriparæ of the poorer class, with no extraneous aid beyond that lent by an obliging neighbor. These commonly escape registration and render our records worse than worthless, because misleading. Even with the elaborate machinery of the Health Department of the city of New York, the published birth-rate is so far below the mortality that if it had the slightest pretense of accuracy, philanthropic statisticians would regard with dismay the approaching extinction of the native population. Despite the energy and industry of the registrar, despite the pains and penalties threatened for all derelictions, it is probable that at least 30 per cent. of the natality is consigned to oblivion. Obviously, to secure full returns, we should have recourse, in the case of a birth, to the parents or custodian of the child; in the case of a death, to the undertaker or other person conducting the funeral, who, as a condition for obtaining a burial permit, must present the stipulated form of record, including the medical certificate. If the registration of marriages is to be attempted at all under the inconsistent legislation of some of our States, it should be transferred to a different recording department, and could not then be made complete unless the bridegrooms and brides, for the benefit of whom and of their prospective offspring it is intended, report their connubial contracts.

Another usurpation of authority which seems to me to be quite indefensible is the ordinance, enforced by many boards of health, compelling physicians to report all cases of infectious disease occurring in their practice. In New York, especially, this conflicts with a State law which forbids the revelation of any information obtained in medical relations with a patient, and places the practitioner between the horns of a dilemma involving a suit for damages if he make the report, or a heavy fine if he do not. Moreover, the popular fear of forcible bureaucratic invasion leads to concealment of contagious cases, without medical care, and thus, perhaps, to an increased morbility, if not mortality, from the very maladies which it is desired to limit. Nor is this popular fear altogether unfounded, in view of the proclivity sometimes shown by sanitary officers to interfere in questions of diagnosis and treatment. Cases of measles have been sent to small-pox hospitals; remittent has been officially pronounced yellow fever, and the patient removed to a public institution; a physician of high standing has been imprisoned without process of law for differing in opinion from a sanitary inspector as to the nature of an ailment; and other less glaring intrusions into the domain of private practice have been annoyingly frequent. Among ignorant or economical people, cases of measles or scarlatina, unless very severe, are often carried to convalescence under purely domestic management; mild attacks of diphtheria are unrecognized, or treated with the traditional red flannel bandage and somebody's patent throat-lozenges; variola has repeatedly been hidden from observation until its extension forced it into notice; comparatively few cases of enteric fever in poor neighborhoods are brought to professional recognition until infection of the environment has already happened. It is, of course, of great consequence for the public safety that early notification of the existence of infectious disease should be given; but with regard to both efficiency and equity the onus of giving this information should rest upon the householder or head of the family in which it exists. The State has a right to declare that none of its residents shall knowingly conceal upon his premises a source of peril to the community; it has no right to force a visiting physician to violate professional confidence or to act as an unsalaried detective.

The demonstrated association of microzymes with a few communicable maladies has suggested the possibility, perhaps the probability, of their association with others in which they have not yet been detected, and the borders of the prophylacteries of the bacteriologists have been enlarged to cover all infections, and peradventure some non-infectious, disorders, under the somewhat halting syllogism: Bacteria are found in some diseases; the diseases in which bacteria are found are infectious; ergo, all infections diseases must be caused by bacteria; and to confer plausibility on the *petitio principii*, the same microörganism —as, for instance, the staphylococcus pyogenes— is credited, or debited, with the production of several different ailments. Hence has arisen an almost acrimonious controversy as to whether a disinfectant must necessarily be a germicide, or whether an antiseptic sterilization of the medium, or a chemical neutralization of the ptomainal product of fermentation, may serve the same purpose. In spite of the logic of past experience the formerly vaunted virtues of copperas, carbolic acid, and the milder metallic chlorides and sulphates are now denied; iodoform is falling into worse than its original bad odor; sulphur dioxide is beginning to be distrusted; and discussion waxes warm over the comparative merits of peroxide of hydrogen, chloride of lime, beta-naphthol, hydrofluoric acid, fluosilicates, benzoate of methyl, mercuric ethyl, mercuric chloride or iodide, cyanide of mercury and zinc, and a daily increasing host of other micro-murderous substances, with a decided preference for the most violently toxic among them, until, even in surgery, it is becoming a delicate task to draw the line between antisepsis and homicide.

The discovery of the tubercle bacillus has so filled the minds of many pathologists as to ex

clude the question if there may not be an antecedent morbid condition which produces a habitat for the microphyte, and arguments apparently pointing to the influence of heredity or other etiological factors are met by the hypothesis that the bacillus may be implanted at or before birth and remain latent for years, nay, through an entire generation; and the morphological twinship of this bacillus with that found in leprosy is used, not in hesitation as to its specific pathogenic power, but to erect a family relation between the two diseases. But even if we were surer than we now are of the bacteriological causation of tuberculosis, its abolition by municipal ordinance would hardly be practicable. The majority of wayfaring poitrinnaires have not had a careful physical examination and skilled diagnosis of their disease, and have neither the means nor the inclination to carry about with them patent disinfecting pocket spittoons; factory operatives, despite what they consider as "a bad cold," will continue as long as possible to earn a living for their families; much of our clothing will be made by phthisical tailors and sempstresses; chronic consumptives will resort to churches, theatres and hotels; we ourselves shall send patients by "palace cars" and "ocean greyhounds" to other climates; and indiscriminate expectoration will probably defy sanitary precept as it has long defied social objurgation. Furthermore, since tubercle bacilli are found also in the fæces and urine, the detrusion of either of these excretions, save in distant disinfected solitude, must be prohibited to satisfy the fastidious bacteriomaniac.

The little explored field of the pathology of the lower animals gives glimpses of the ancestry and evolution of some of the diseases of mankind, and may in time furnish much help to preventive medicine. Already we have learned that cattle are subject to tuberculosis, and we suspect that the *materies morbi* is often conveyed to man through their milk or meat; indeed, according to the researches of Dr. E. F. Brush, human tuberculosis has nowhere prevailed until after the introduction of milch cattle, But, unfortunately, these animals frequently present no recognizable symptoms of the malady with which they are afflicted, and the diagnosis can only be made post-mortem—a method scarcely within the permissible scope of dairy inspection. The investigation of the "Hendon" epizootic, and subsequent observations, indicate the possibility that scarlatina may arise from an eruptive disease of the cow, though whether this disease is contracted from human patients, or spontaneous in the brute, is a question for further inquiry. The alleged susceptibility of the domestic mouse to the scarlatinal virus may likewise have some bearing upon the occasionally mysterious appearance of the disorder; that dogs and cats may transport the infection, even if they do not suffer from a modified form of the exanthem, is an accepted doctrine. Diphtheria affects several genera of animals, notably barnyard fowls and pigeons. We know, if not the primal origin, the proximate sources of glanders, hydrophobia, anthrax, actinomycosis; we have become acquainted with the Oriental filaria sanguinis and its transference to drinking-water by the mosquito; with the canine echinococcus and the porcine cysticercus; we are still debating whether the hog gets trichinæ from the rat, or *vice versa;* cases of entero-colitis in infants and infectious aphthæ in adults have been traced to "foot and mouth disease" in kine; profound anæmia is induced by the anchylostomum duodenale, the embryos of which lead an independent aqueous existence, undergoing various changes of form and habit; the distomum hæmatobium passes through multitudinous transformations, and inhabits temporarily the bodies of fish, molluscs, or small crustaceans, before it can excite hæmaturia or "Egyptian dysentery" in the human system; and, beyond these grosser parasites, we may yet learn that the contagia of other diseases have their intermediate hosts and transitional modifications.

From the vegetable as well as from the animal kingdom, some already known, and mayhap some yet unknown, pathogenic elements may invade our diet, and, to an extent commensurate with our actual knowledge, sanitary administration is justified in controlling the public food supply. The sale of diseased food may properly be stopped —with a saving clause touching *paté de foie gras* and its epicurean congeners; decomposing food may be condemned (except, perhaps, in the case of "high" game suppers), because we know something, and are daily learning more, of the alkaloids of putrefaction; adulterations come within our ken if they be directly or indirectly injurious to health, but mere trade frauds, such as the admixture of flour with mustard, or chicory with coffee, fall more fittingly under the jurisdiction of statutory law, which is quite competent to deal with them. I cannot agree with an acquaintance of mine in the public sanitary service who, being himself a dyspeptic, classes foods according to their comparative digestibility, and holds that strawberries should be declared dangerous to public health because they give him urticaria.

So with regard to the abatement of nuisances, of which the sanitary and legal definitions differ widely. The latter includes anything which impairs the enjoyment of life and property; the former concerns only things which may be deleterious to the health of the community, and cannot by the most forced construction be made to comprise the inconvenience of cock-crowing or piano-practice. Noxious trades should be controlled and, if necessary, suppressed, by sanitary authority, but an odor from a manufacturing pro-

cess may be disagreeable without being dangerous to health, and in such case the remedy lies elsewhere.

Waning time admonishes me to curtail a list of examples which might be extended almost indefinitely, but I have perhaps said enough to support the conclusion forced upon me by study and experience, which is this: Sanitary administration, like all other governmental intervention in a free country, can be legitimately exercised alone for the welfare of the community, interfering with the individual only when his actions imperil his neighbor. Bearing always in mind the limitations of our present knowledge, our sanitary regulations should be cautiously based upon established truths, and executed with scrupulous discretion. The position of health officer should everywhere be a career, not an episode, and for this he should be specially trained, and his tenure of office should depend solely on his efficiency. For the real advancement of hygiene, the people themselves must be educated to coöperate with us for their own good; every avoidable attempt at coercion arouses opposition and retards the end we have in view.

In these propositions I may be at variance with some enthusiastic sanitarians for whose conscientiousness of opinion I entertain the greatest respect; but I believe that I shall have the concurrence of the majority of the profession and of the intelligent public.

MEDICAL PROGRESS.

Sugars as Diuretics.—An interesting communication on this subject is made by Dr. Meilach as the result of experiments performed in the therapeutical laboratory of the Cochin Hospital. Lactose and glucose are the most powerful diuretic sugars. These may be termed renal diuretics; injected in the veins of animals they produce no increase of pressure, and no corresponding alteration of pulse when ingested by man. Diuresis is produced without the appearance of the lactose or glucose in the urine; these substances are consumed in the organism, and thus we have physiological medicaments serving at the same time as food; they possess an advantage over caffeine in producing no nervous derangement. The discharge of urine exceeds the quantity of fluids ingested, the diuresis being produced by a kind of dehydration of the blood. The diuresis reaches its maximum in cases of dropsy, of cardiac or cardio-vascular origin, when the urine contains no albumen, though it is also considerable when a small amount of albumen is present. Lactose is active only in the form of glucose, which is therefore nature's form of the medicament. Lactose is administered in the proportion of 100 grm. to 2 litres of the excipient; glucose in the proportion of 200 grm. of the syrup to 75 or 100 of the excipient; 150 grm. of glucose syrup produces profuse polyuria while 100 grm. is sufficient to produce a well marked effect. The grape cure is applicable to the same class of cases as those in which glucose is given, and it is believed that its diuretic effects are due in great part to the glucose contained in the grapes.

Sozoïodol in Rhinology and Laryngology.—In a thesis on this subject, Dr. Stern gives the therapeutical indications for this new product. He is unable to determine the particular element in the sozoïodol to which it owes its action, but he is inclined to believe that its action depends upon the grouping of the component atoms. Sozoïodol possesses the advantage over iodol and iodine of being disengaged in the organism in its organic composition and not in the form of an iodurite. Furthermore, the action of the sozoïdols may be varied in their action by combining them with various metals. The following are the indications given by Stern for the employment of the various preparations of sozoïodol in diseases of the nose and larynx:

1. Sozoïodol of sodium, readily soluble. Indicated in all cases where it is desired to obtain a general antisepsis rather than a local antiseptic action. It is also used in all cases where aqueous solutions are employed.

2. Sozoïodol of potassium, sparingly soluble. It diminishes the secretions and acts as a dessicant—it is therefore indicated in eczema. It is usually employed with talc in the proportion 1–5 or 1–6.

3. Sozoïodol of zinc acts locally as an irritant in solutions of from 1–20 to 1–50, and as a caustic in a solution of 1–5.

4. Sozoïodol of mercury acts locally as a caustic, even in a solution of 1–10. Miller affirms that a solution of 2½ parts in 100 of this solution kills the acarus in 24 minutes.

Good results have been obtained in atrophic nasal catarrh (sozoïodol of zinc 1 part, talc 10 parts), in hypertrophic rhinitis and rhinopharyngitis (sozoïodol of zinc 1 part, talc 12 parts); good effects have also been obtained in tubercular ulceration of the pharynx and larynx, and in syphilis of the nose and larynx (zinc salt 1–12, or mercuric salt 1–20). The sozoïodol should be used in the form of powder unguent, etc. Where use is made of aqueous solutions the sodium salt should be used.—*L'Union Méd.*

Hair Tonic.—Rabow recommends the following mixture as a stimulant to the scalp.

Spts. saponis	
Aq. coloniensis ää	100.0
Tr. cinchonæ Co.	2.0

—*St. Petersburger Med. Woch.*

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SATURDAY, MAY 24, 1890.

TENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS, SPRINGFIELD, 1890. REPORT ON MEDICAL EDUCATION, MEDICAL COLLEGES, AND THE REGULATION OF THE PRACTICE OF MEDICINE IN THE UNITED STATES, 1890.

The work of this Board has been looked for with much interest, especially as the executive of the Medical Practice Act of this State. It has been the subject of careful study by all interested in higher medical education. In 1879 a paper was presented to the Association at the meeting in Atlanta, in which the condition of the profession in the State at the time the Act went into effect was briefly stated, and the results likely to be realized, indicated. In 1883, at the Cleveland meeting, the work then accomplished was presented to the Section on State Medicine, and became the subject of an interesting discussion. Since the organization of this Board there have been similar enactments in other States, and the public has come to think that something can be done in the way of legislation to increase the efficiency of the profession, and thus secure for it a higher place in the estimation of the people. It must be confessed that the friends of such legislation were not very confident as to the outcome when the Illinois law went into effect in 1877. After thirteen years we think there is reason to feel satisfied with the working of this experimental effort, for such it was in the beginning, to regulate the practice of medicine, or in other words, to require evidence of knowledge and honesty as a condition to the exercise of the profession.

The law has always had a guaranty for its members in the examinations for admission to practice, and its provisions for discipline. The people are beginning to think that the interests of health and life are as important as those of property and liberty.

It is interesting to note the evident effect of this law upon the number and constitution of the profession in the State. It is certain that the population of the State has largely increased, and yet the number of persons engaged in the practice of medicine on the 1st day of January, 1890, is less than on the 1st day of July, 1877. In other words, the ratio of physicians to population has very sensibly diminished.

It also appears that a very great change has taken place in the qualification of the profession. When the law went into effect there were in the State engaged in practice 7,400 persons. Of these 3,600 were graduates from some medical college. While 3,800 were non-graduates. In other words, the graduates constituted only 48 per cent. of all engaged in practice. On the 1st day of January, 1890, the percentage of non-graduates to the whole number was only nine. From 3,800 the number has been reduced to 575.

Whatever may be the value of a diploma as an evidence of knowledge, it is morally certain that in the aggregate graduates in medicine are better qualified, are better educated than non-graduates. The discriminating power of the Board as to what constitutes a reputable medical college gives additional value to a diploma accepted by it, as an evidence of qualification.

For much of the very satisfactory results of the working of the Illinois law the profession is indebted to the Secretary of the Board, DR. JOHN RAUCH.

The report is accompanied with other matters of interest. Especially will it be a source of gratification to those of our medical friends in the State of Illinois, who served in the late war, to find such a just and graceful recognition of the service which they rendered to their country in its time of trial.

The report or history of the medical institutions of the United States and Canada will always be recognized as a work of great value, not only in Illinois, but wherever accurate in-

formation is desired concerning medical institutions and medical education. A hasty examination of it impresses us with the immense amount of work and care involved in its preparation.

It is with pleasure that we note the great degree of uniformity, especially in the Western States, of legislation upon the important subjects pertaining to public health. Should it be found possible to coördinate all these State Boards by National legislation, so as to secure, in case of common danger, uniformity of methods and wise coöperation, a very great advance would be made towards the realization of the ideal health organization.

CORDIAL WELCOME TO THE BERLIN CONGRESS.

Virchow writes an interesting salutatory to the April number of his *Archiv*, which issue marks the beginning of his 120th volume. He takes occasion to welcome the medical fraternity of the whole world to the coming Berlin Congress, which he fondly hopes will lead up to permanent international good-will and concord. He frowns upon any sectional root of bitterness, and promises to do his share towards having the rights of all comers considered. He is not quite sure of a peaceful result, but he points off its eminent desirability, for he says: "Let us show that medicine ennobles men and brings them near to the ideal humanity. Let us strive together, as in war, so in peace, to heal the wounded and cure the sick, no matter to what camp they may belong; for we physicians do not make war; it is our first and fairest task to mitigate its terrors and to replace hate and discord by reconciliation and unity."

That is undoubtedly the way it should be. These are sentiments worthy of the man and of the occasion; but these conventions and congresses have a well known tendency to bring to light every little rift in the lute of medical harmony. It is worthy of notice that there is no lack of cordiality on the part of the European medical journals towards the great Berlin gathering, with the single exception of those of France. The Parisian journals are decidedly mute. Virchow does not refer specifically and plainly to this coolness among his Parisian brethren, but he endeavors to assure them, and all others, that his aims are all for science and naught for topography. It is reported that very few favorable responses from men eminent in the French profession have been received in regard to the reading of papers or participating in discussions. It is to be hoped that the cordiality of Professor Virchow's welcome may tend to thaw the crust of coolness that appears to obstruct the full and free coöperation of the convention-loving Frenchman in the grandest medical congress that has yet been convened.

BROMIDE OF GOLD IN HYSTERIA.

The investigations of Bourneville, Goubert and others respecting the use of the bromide of gold in epilepsy, have been supplemented by experiments with the same substance in other nervous affections. Two Russian physicians, Rozenbach and Merzheevski, have employed it in a number of intractable cases of hysteria. *The Lancet*, April 19, summarizes from a recent issue of *The Vrach* their results with comments as to its usefulness in a certain range of cases in which the bromide of potassium had failed. The doses, at the outset, were ¼ of a grain, afterwards increased to ½ and higher. Under its influence, the attacks became milder and shorter, with increasing intervals between them; the only untoward effect reported was a moderate anæsthesia of the mouth. The drug is readily soluble in water, and keeps well if not exposed to a strong light. The drug is not an extravagantly expensive one, as the doses are relatively small as compared with the other bromides; 15 grains cost six shillings, English currency, and that amount will suffice for the ten to fourteen days, during which the experimentation with the drug will have been inaugurated. In regard to epilepsy, the use of steadily increasing doses has been followed by good effects in the hands of Dr. Danillo. He employed it in eight cases, beginning with ⅕ of a grain four times a day, and afterwards increasing the number of doses to twelve and sixteen per diem, but ordinarily 1 grain daily was the dose for an adult in the cases reported by the Russian physicians.

Ontario Medical Association.—As the Provincial elections take place on June 5, it has been decided to postpone the meeting of the Ontario Medical Association to the following week. The Association will therefore meet in Toronto, on Wednesday and Thursday, June 11th and 12th.

EDITORIAL NOTES.

To our Readers.—As the reading matter forms of The Journal are printed off by Wednesday of each week, the management have thought it better not to delay this issue in order to insert an imperfect report of the Nashville meeting, but rather to publish The Journal of the 31st as early as possible during the coming week, so that by the time the members reach their homes they may receive it with as much of the report as the space at our command will admit of insertion.

It is expected that the number of medical practitioners taking part in the International Congress at Berlin this autumn will not fall short of 5,000. In view of this large attendance the idea of a general banquet has been abandoned, and each of the eighteen Sections will have its own special dinner at 10 shillings a head. The recently established Berlin Laryngological Society will also entertain the members of the Section of Laryngology.

Medical Aid to the Poor in Kazan.—The Düma (Town Council) of Kazan has just appointed four doctors to render gratuitous medical assistance to the poor of the East Russian town, which numbers about 150,000 inhabitants. They are to receive a salary of 1,000 roubles (about $500) a year, and are forbidden to engage in private practice. An allowance of 2,580 roubles ($1,290) yearly will be made by the Düma for drugs and working expenses.

Non-nauseous Antipyrin. — To mask the taste of antipyrin, Dr. Ballerny, in the *Lyon Médical*, advises the addition of an infusion of coffee, with milk, to the watery solution of the drug. Another thing that will disguise the taste of this drug is soda-water with a currant or raspberry syrup; this latter will lessen its disturbing action upon the stomach, amounting at times to a prolonged and intractable nausea.

Accidental Death of a Physician.—Dr. R. H. Cameron, of Johnstown, N. Y., lost his life April 26, while engaged in breaking in a colt at the local driving park. He was prominent as a physician, with special aptitude for ophthalmic work. He was in his forty-fifth year and had been in practice twenty years, having gone to Johnstown very soon after taking his degree at the Medical College at Albany, class of 1870. He was a member of the Fulton County Medical Society, of the State Society and numerous social organizations.

Canadian Medical Association.—The meeting of this Association for 1890 will take place at Toronto, September 9, 10 and 11. A Committee of Arrangements has been appointed, with Dr. Canniff as chairman. This Committee has met, and taken into consideration the means by which the meeting in the Queen City may be made most pleasant and profitable to the visiting brethren.

One result of Prince Bismarck's retirement will, perhaps, be a notable improvement in the eyesight of his countrymen. German oculists almost unanimously attribute the extraordinary prevalence of presbyopia and other defects of vision in the Fatherland to the use of the national blackletter type in school books. Prince Bismarck has always resolutely stood upon the ancient ways in this matter, and has opposed the substitution of the Roman for the Gothic character in German books. The party of typographical reform is now hopeful of succeeding in its object.

Mitchell District (Ind.) Medical Society.—The annual meeting of this Society will be held at Indian Springs, on the E. & R. R. R., June 12, 13 and 14. The new hotel, with accommodations for four hundred guests, will be opened June 1. Practical contributions are solicited, and titles should be forwarded to Geo. W. Burton, M.D., Chairman Committee of Arrangements, Mitchell, Ind.

Changes in Faculty.—The following changes have been made in the Faculty of the Medico-Chirurgical College. Dr. J. M. Anders transferred from Diseases of Children to Clinical Medicine; Dr. Ernest Laplace made Professor of Pathology and Clinical Surgery; and Dr. Samuel Wolfe Professor of Physiology.

Dakota Medical Society.—The ninth annual meeting will be held at Sioux Falls, South Dakota, June 12, 13 and 14, 1890. Business sessions of the meeting will be held in Odd Fellows Hall, and order will be called promptly at 2 P.M. Thursday, June 12. All regular physicians in the State are invited to be present and join the Society. Delegates from either State or local medical societies will be cordially welcomed.

TOPICS OF THE WEEK.

THE PSYCHOLOGICAL ASPECT OF MEDICINE.

Science is verging rapidly and closely to the general acceptance of a somewhat new truth, and one which I believe will even more powerfully affect our conceptions of the etiology of disease than even the discovery of the germ, viz.: that the true seat of disease is more often than we can now understand or even conceive in the centres of the brain. As we discover the functions of its various parts, we see that it is derangement here that produces the trouble yonder, which in our short-sightedness we have been calling peripheral. When we find fever we need not even now always invoke the ever useful "Malaria" as an explanation, but may oftentimes refer it to a derangement of the temperature centre. When we have convulsions we are not driven to "teething" or "derangement of the stomach" for the cause, but may look at once to the conditions of the motor centres. Increased rapidity of the heart's action is probably always due to disturbance in the accelerator centre in the medulla. So the circle widens and will probably include every function. Remembering how closely connected and how intimately related are all parts of the brain, we can appreciate how, acting upon it, a mental impress may produce an effect hurtful or remedial in any part of the body.

The complexities of the machine are marvellous and infinite.

Poetic conceptions of the human soul are giving way to physical. Need the beauty lessen? The beauty of the maiden or the rose is physical. The marvel of the human brain is as great as the marvel of the human soul. Are we not dimly conscious that the human soul is a condition of the human brain? Does not this conception bring us nearer to our fellow? Can we not better lend a hand? He who has a true and helpful conception of life has first studied deeply the workings of his own soul. Who that has writhed Laocoon-like in the folds of human passion? Who that has soared poet-like into realms of peace, and while thus writhing or soaring has taken note of himself—of his inner consciousness—has not realized how much of the physical there is in it after all. The turgid brain in passion, the tranquil brain in peace. Indeed, the terms are almost convertible. Passion is turgidity of brain; peace is tranquility of its circulation. How this view broadens the work of the physician in the field of mind! He is no true physician who has not insight. He truly, that hath it not, heals only the wounds of the body. To be a true physician one must be able to play at least a few measures upon the strings of the soul.

Faith-healing has come and gone, but left a deeper sense of the great truth, dimly conceived by the scientific mind before, that what we term mental influences may be used to produce marvelous physical results. Do you doubt the physical effect of an idea—a thought—a conception? Then brood and brood over some conception almost comparative in its character. Note the sense of fullness, perhaps of pain, that fills the brain. Then let something happen that dissipates the idea or shows the conception erroneous and note that sense of suffering—how quickly it has passed away. In an instant the tension and irritability have vanished. Tranquility of brain and mind reappears, and life moves on in happier circles.

The physician but too often regards himself but the "healer of wounds of the body." This conception is too narrow to befit either himself or his opportunities. There is a broader sense in which he may be the benefactor of his race—as an educator. His it is, if he will, first to teach the world the value of that great function inhibition—control. To show to the world that great physical fact, the relation of the centres and the incalculable value of proper order and subordination in them in the making of character. Nature, ever wise and thoughtful, in placing the organic functions in the medulla—the sensory and emotional next above and the motor and intellectual highest in the brain—has hinted to us their order. That these be masters; these servants.

I once had a curious case, the management of which was for a time beyond me. I tried medicines; influences, mental, moral, physical. Still I failed. Finally I wrote a letter in which I carefully elaborated this idea that the brain is a household of centres; some of which were servants, some masters; and pointed out the fact that in her case the servants had become masters. She recovered promptly. I flattered my medicines. Long after she said: "Doctor, it was your letter that cured me." I believed her. But I will not concede that the letter was not in the highest and best sense a medicine.

The advance in knowledge and its permeation has been so wide and deep that even the comparatively ignorant are dimly conscious that wounds of the soul are in some sense physical. Does any one to-day ask despairingly, "Who can minister to a mind diseased?" On the contrary he betakes himself to his physician, if so be that physician is a man of sympathetic insight, and opens to him his life and says, "What shall I do to save me from myself?" From the "*I*" that is consuming me?

Balzac, writing when science existed only as an infant and superstition reigned, said: "There are three great healing professions—the priest, the lawyer, the doctor. The first, stanches the wounds of the soul; the second, the wounds of the purse, and the third, the wounds of the body." How narrow this conception to-day? The pastor as a confessor has well nigh passed away. The physician has taken his place because he has been found helpful in a larger way. It has been said that one who has ever successfully practiced medicine can never afterwards content himself with any other calling. What wonder? *Is* there any other in which the contact of mind with mind is so close, or where the impact of soul upon soul is so powerful? The man of business, the lawyer, or pastor, sees but the merest surface. Uncharitableness in relation to human kind and conduct is thus to be accounted for. The physician may become a sort of recluse—he may, and probably does, permit himself to become petty and narrow in many things, especially toward his brother *medicus*—but he ever remains magnanimous in relation to human kind and conduct.

He, the earthly searcher of hearts, finds therein much of good along with the degradation and inevitable debris of life, and he learns to estimate his fellow rather by the good than by the evil he finds.

To the Greek mind, which was above all acute in its poetic conceptions and intellectual discriminations, the term Psuche or Psyche meant either soul, butterfly, or breath, thus typifying in one word the mystery, the beauty, the evanescence of mind.

In this our age, practical—unpoetic—seeking knowledge of tangible things, much of the sentiment pertaining to the human soul has passed away, yet it remains, as to the Greeks, the most mysterious, the most beautiful, the most evanescent of all created things; showing at once how real, how truthful, how lasting are poetic conceptions.—Clark Gapen in *Omaha Clinic*.

SEPTIC PERITONITIS.

Many fevers now distinguished from each other were once held to be one and the same disease. The process of pathological specialization has made such advances, on the strength of sound scientific evidence, that even the term "septic peritonitis" is now held to confound two or more distinct diseases under the same name. Learned papers on the subject are hard for any reader not an expert to follow, and experienced operators are seldom eager to acknowledge pathology and bacteriology as their chief guides. Prof. Bumm, of Würzburg, has, however, lately brought out an intelligible communication "On the Etiology of Septic Peritonitis." It will be found in the January number of the *Annales de Gynécologie*. Dr. Bumm's valuable researches into the nature of the specific germs of tubercle and other diseases are well known. He distinguished three forms of inflammation of the peritoneum: Aseptic, septic, and specific peritonitis. The first form is developed through the agency of mechanical or chemical irritation. It generally ends in fibrinous exudation, and adhesions between different abdominal structures are thus established. The septic form of peritonitis includes two distinct varieties, one due to the streptococcus, the other simply putrid. Streptococcus peritonitis appears to be a very definite malady. It is almost invariably the result of puerperal infection. The germs reach the peritoneum, from their origin in the genital canal, either through the Fallopian tubes, or through the uterine walls and surrounding lymphatics. The fluid in the peritoneum when death occurs very soon after infection is clear and free from odor, but loaded with streptococci and intensely virulent. A minim, or less, injected into the peritoneum of a rabbit will rapidly set up deadly peritonitis. The physical symptoms are little marked; the intestines are greatly distended, but their serous coat remains white and smooth, and patches of lymph are few and pale in color. When death occurs after the disease has lasted for two or three days, the fluid in the peritoneum becomes puriform and far less deadly to other organisms. The familiar morbid appearances are plainly marked.

Streptococci which are cultivated apart from the fluid developed in peritonitis are also not very deadly. No doubt, men who do not believe in germs will on that account contend that it is something which comes with the germs that causes such disastrous results. The germs do the least harm when introduced without any fluid, or when they have dwelt for some hours or days in peritoneal fluid. According to strict scientific evidence, however, it appears that the greatest harm arises from the combination of streptococci with exudation thrown out in the earliest stages of peritonitis. The streptococcus disease, as we may term it, may attack patients on whom abdominal operations have been performed, through infection which is probably always derived from a puerperal case. As a rule, however, the disease which follows abdominal sections or perforation of the alimentary canal is "putrid peritonitis." In this variety the exuded fluid is from the first fetid and turbid. It contains, not one specific germ, but a mixture of germs. It does not set up peritonitis if injected into the peritoneal cavity of rabbits in small quantities. In cases of putrid peritonitis the mixed germs lie in a favorable medium and multiply with rapidity. They then are able to set up a widespread decomposition of the fluid in the peritoneum. Hence the disease progresses slowly, going from bad to worse, whilst the streptococcus variety begins with symptoms of extreme virulence.

Of specific forms of peritonitis, the tuberculous is the most distinct. According to Dr. Bumm the existence of a gonorrhœal peritonitis is doubtful. Gonorrhœal pus poured out of a ruptured tube into the peritoneum seems to act as an aseptic fluid provided it be pure, and becomes encysted. When mixed with pyogenic germs the case is different, and septic peritonitis may follow.—Editorial, *Brit. Med. Journal*.

DOCTORS AND WINE.

Nothing indicates more plainly the healthful advances in regard to diet than the changes that have occurred in physicians themselves. Two hundred years ago, and even much later, doctors were notorious for their eating and tippling, and were generally very fat. Dr. Beddoes was so stout that the ladies called him their walking feather bed, and Dr. Fleming weighed 291 pounds until he reduced his weight by abstinence and eating a quarter of an ounce of Castile soap every night, and Dr. Cheyne weighed 384 pounds. It is said that it was during the seventeenth century, when doctors drank so heavily, that it became fashionable for them to write such illegible prescriptions, which were the result of their trembling hands. The man who remains abstemious where no liquor is to be had, does not deserve much credit, but the man who is temperate when the sparkling champagne stands beside his plate merits our approbation.

THE LAW CONCERNING HYPNOTISM IN SWEDEN.

The question whether a hypnotized person who acts at the suggestion of others is responsible for his actions is considered in Sweden to depend upon the fact whether he knew of the danger to which he exposed himself in being hypnotized, and submitted to it voluntarily. If so, by the law of that country, he is held responsible, otherwise not.

SOCIETY PROCEEDINGS.

The Illinois State Medical Society.

Fortieth Annual Meeting held in Chicago, Illinois, May 6, 7, and 8, 1890.

(*Concluded from page 733.*)

SECOND DAY—MORNING SESSION.

DR. C. W. EARLE, Chairman of the Committee of Arrangements, announced that immediately after adjournment at noon, the Society would repair to Kinsley's, where a lunch would be tendered to visiting members by the Faculty of the Post-Graduate School of Chicago.

THE REPORT OF THE COMMITTEE ON SURGERY

was then read by its Chairman, DR. F. C. SCHAEFER, of Chicago.

In scouring the field of surgery, said Dr. Schaefer, we are compelled to admit that antiseptic surgery is an established fact. Very few surgeons at the present time have the hardihood to treat wounds without some pretensions to antisepsis. *Sterilized lint.* M. Regnier recommends lint sterilized at the temperature of 248° F. for surgical dressings, having himself used it in many operations of various kinds with as good results as with antiseptic dressings. A surgical dressing may be antiseptic, and yet not germicidal. It is then inhibitory in its action, it prevents the germs from passing through it into the wound, and such qualities Lister claims to have found in the double cyanide of mercury and zinc, and by means of experimentation he has succeeded in preparing a gauze charged with the double salt. He says the double cyanide requires about 3,000 parts of blood to dissolve it. If, therefore, it is present in a gauze in the proportion of about 3 per cent., you will easily understand that blood serum may soak through such a gauze time after time without washing the ingredient all out; so that it is a material which is admirably stored up in the dressing. That is one of its three great advantages, the others being that while trustworthy as an antiseptic it is completely unirritating, and under this we find that not only do wounds, the edges of which are brought accurately together, unite beautifully by first intention, but even granulating sores heal by the gradual process of cicatrization from the edges—heal by scabbing in a way that we have never seen under any other dressing.

The Surgical Treatment of Typhlitis.—The operation should not be performed until all inflammatory and other symptoms have quite subsided. The incision should be made obliquely from above downward and inward over the cæcal region, its lower extremity ending just external to the epigastric artery. The incision should not be made directly over the appendix or over the dullest region. If it be so placed a number of adhesions will probably be encountered, and the demonstration of the peritoneal cavity might be difficult. The cæcum or the appendix might be actually adherent to the anterior abdominal wall. The incising of the peritoneum should, therefore, be conducted with the very greatest care. It is well that the parietal cut should open the abdomen at a point just beyond the diseased area, and where no adhesions exist. When the appendix and cæcum are exposed, the area of the operation should be cut off from the general abdominal cavity by sponges. If this plugging with sponges be well carried out, no blood should enter the peritoneal space. All adhesions should be divided by cutting; none should be "broken down." The latter measure is apt to tear the bowel, or, at least, to bare it of peritoneum. The appendix should be lightly clamped close to the cæcum, and should be divided about ½ inch from that intestine; it should not be secured by a simple ligature. The mucous membrane should be united by many fine sutures, or by a continuous suture; then the divided outer walls of the process should be brought together by a second row of sutures—it is practically impossible to bring the serous coats together. To still further secure the orifice, the stump of the appendix might be lightly attached to any adjacent surface of the peritoneum. The abdominal wound should be closed; no drain is required. (Treves.)

Perityphlitis vermicularis always belongs to the province of surgery, and the following two points are proven: 1. That perityphlitis is always accompanied with a pus cavity. 2. That with the present plan of treatment the patient is more liable to a recurrence of the disease. (Murphy and Lee.)

Other subjects upon which Dr. Schaefer commented at length were: herniotomy, bone surgery, gastrostomy, gastroenterostomy, etc.

DR. J. A. FREEMAN, of Millington, read a paper on *Harrison's Operation for Enlargement of the Prostate Gland*, which was followed by a contribution by DR. GEO. N. KREIDER, of Springfield, entitled

SURGICAL AND MECHANICAL THERAPEUTICS IN DISEASES USUALLY TREATED BY MEDICINES ALONE.

He presented the following conclusions.

1. That mechanical and surgical measures are the most certain in our armamentarium and are only now assuming their proper position.

2. That when called to see a case of disease the first aim of the practitioner should be to determine by proper examination and research whether some mechanical or surgical appliance cannot be used in conjunction with or in place of medical treatment.

3. That the "do something" which this ac-

tion implies will be more uniform in its results, more successful in its curative effects, and more pleasing to the patient than the "think something" treatment which tries every medicine by turns and nothing long, and hopes for beneficial results.

4. That the ability to use exact appliances for the examination of patients and treatment of disease should be possessed by every one attempting practice, and that this ability is only to be obtained by preliminary training and clinical instruction.

5. That treatment of disease in this manner has a tendency to elevate the profession in the eyes of the public, and to dissipate nonsensical sects which divide the profession and waste its energies.

MALIGNANT DISEASES OF THE RECTUM.

The general discussion on this subject was opened by Dr. D. W. Graham, of Chicago, who made some remarks on *clinical diagnosis*. Dr. Graham said we have a certain group of symptoms common to almost all organic diseases of the rectum. These consist of interference with the function of the bowel, more or less diarrhœa, watery in character, more or less blood and mucoid discharges mixed with fæcal matter, this condition alternating with constipation. Pain is present; there is a general disturbance of health, as well as a disturbed mental condition peculiar to this region. Along with these symptoms we may have tubercular or the ordinary dysenteric ulceration of the rectum, with cicatricial contraction resulting. We may have the results of true syphilis present, the ordinary gummy deposit and the so-called syphilitic inflammation of the rectum, which causes the deposit and ulceration and thickening. The age of the patient is an important aid to diagnosis. The disease usually develops during or after middle life. A few cases, however, are on record where the disease developed in people of 20 years of age.

Palliative Treatment, by Dr. E. P. Cook, of Mendota. The indications for palliative treatment of malignant diseases of the rectum were to maintain the permeability of that portion of the intestinal canal and the solubility of the fæces, to prevent the accumulation of fæces above the diseased parts, to secure a free passage of fæcal matter and gases from the gut, to retard and arrest development of the disease, and to relieve pain.

Dr. C. Truesdale, of Rock Island, spoke on palliative operations and their relative merits. He said a constant result of malignant disease of the rectum are more or less stricture and resulting obstruction to the passage of fæces. The first palliative operation resorted to is usually urethral or rectal bougies, for the purpose of dilating any stricture or strictures which may exist. When the conclusion is reached, however, that an operation for a radical cure is inadmissible, the less we meddle with the rectum the better. The only thing worthy of trial, in his opinion, is an occasional irrigation with some warm antiseptic solution, such as warm carbolized water, the latter acting not only as an antiseptic, but also as a sedative.

Dr. John E. Owens, of Chicago, dwelt upon the radical operations and their relative merits. The operative treatment for cancer of the rectum may be briefly considered under two heads, viz: Firstly, colostomy, or the establishment of an artificial anus, or some modification of the operation for diverting the fæces from their passage through the rectum, and thus dispensing with this portion of the bowel as an active organ; secondly, proctectomy, ablation, or excision of the rectum. Proctectomy is confined to the lower portion of the bowels. If not attended by an undue mortality, or followed by great disadvantages, it should take its stand as an established procedure. During the last two or three years Dr. Owens has advised all patients who have been operated upon for cancer to report to him every thirty days. In this way recurrence of the disease can be dealt with promptly.

SENILE PROSTATIC ENLARGEMENTS.

The discussion on this subject was opened by Dr. Edmund Andrews, of Chicago, who illustrated his remarks. Dr. Andrews was followed by Dr. A. E. Hoadley, of Chicago, who discussed in an able manner the indications for supra-pubic and perineal method of approaching the prostate for operation.

What are the Recognized Methods for Removing Prostatic Obstructions? was the subject of Dr. C. Chenoweth, of Decatur.

Dr. A. B. Strong, of Chicago, read an interesting paper on *The Results of Operations for the Removal of Prostatic Obstruction.*

Afternoon Session.

Renal Calculus.—The diagnosis was discussed at length by Dr. I. N. Danforth, of Chicago; the operation by Dr. J. Frank, of Chicago.

Perityphlitis.—Diagnosis was discussed by Dr. E. W. Lee, of Chicago; *operative treatment* by Dr. Frank Andrews, of Chicago; *when to operate*, by Dr. J. B. Murphy, of Chicago. Dr. Murphy said Deahna operated on seven cases in which there was neither fluctuation nor phlegmon in the abdominal wall, and in only one case did he fail to find pus. He was satisfied that there was almost entire absence of induration in this case, and could not be certain that pus was not present before making an operation. He operated from the ninth to the twenty-first day from the onset of the attack. In one case he failed to come directly on the abscess, but the pus emptied itself through

the wound on the second day afterward. Usually at the end of the fourth day symptoms of general peritonitis subside, and there can be felt a slight induration in the right iliac region; then is the time to operate. Dr. Murphy called attention to cases where there is only a small induration in the ileo-cæcal region, with the accompanying symptoms of perityphlitis, before there is the slightest evidence of fluctuation or phlegmon in the abdominal wall. It is difficult to give the exact indications for the proper time to operate when the symptoms are slight, for both the patient and the surgeon are reluctant to resort to operative interference. As yet the number of cases operated on have been too small to lay down any definite rule, notwithstanding it is Dr. Murphy's conviction that before many years every case of perityphlitis, when diagnosed, will be immediately opened, the appendix ligated, if possible, and amputated. This operation gives the only guarantee that the patient can have of safety from the impending danger of the disease and security against its return. It must be remembered that in making the examination the greatest caution should be exercised in palpation and percussion, as he knew from experience in making autopsies that slight pressure can rupture the adhesions and the whole contents of the pus cavity escape into the peritoneum.

Treatment of Wounds.—This subject was opened by a brief paper read by Dr. D. A. K. Steele, of Chicago, on the relative value of the different suture materials. He said that in selecting a suture material we are guided by the light of modern surgical pathology to select a material that is surgically clean, a substance that, by suitable preparation and preservation, has been rendered aseptic, *i. e.*, incapable of containing within itself microörganisms that would carry infection from *without* into the tissues of the body. By a rigid adherence to this rule we are enabled to emulate Marcy and close an aseptic wound by an aseptic suture aseptically applied.

The best method for preservation of the different suture materials until required for use, was discussed by Dr. E. W. Andrews, of Chicago.

What is the best method of to-day for preventing infection of operative wounds? was the subject of Dr. L. L. McArthur, of Chicago. As patient, operator, instruments, sutures, and dressings may, any one of them, be a source of infection, Dr. McArthur devoted his attention to each. He ventured the statement that one-half of the primary wounds under the present methods are dressed aseptically at the time of operation, and then only become infected at the re-dressing. Operators under excitement are inclined to drop into careless habits and proceed somewhat after the following fashion: They call for a questionable basin, and dropping into it an indefinite amount of carbolic acid, proceed to remove the dressings without any such formalities as we were satisfied were essential at first. Here is where the fallacy lies to-day. Too great carelessness at the redressing, permits infection, and encourages the sceptical in the belief that there is nothing in the principles of aseptic surgery. Before the old dressing is removed a stream of 1-1,000 should be ready and playing on the inner layer of gauze as it is being removed and during the time of exposure of the wound. Having rendered the parts clean, they can best be kept so by providing in addition to the regular dressing, a heavy dressing of absorbent cotton, not with the idea of catching discharge, but with the object of filtering the atmosphere which is to gain access to the wound through the dressings.

On motion the Society adjourned and immediately repaired to Kinsley's, where a lunch was tendered by Dr. C. T. Parkes, of Chicago.

THIRD DAY—MORNING SESSION.

DR. S. S. BISHOP, of Chicago, read a paper on *Menthol in Diseases of the Air Passages.* He had used it considerably in a variety of diseases, and believes its remedial properties entitle it to an important place in the work of general practitioners and specialists alike. A 5 or 10 per cent. solution is as strong as patients generally will bear without discomfort.

DR. E. F. INGALS, of Chicago, read a paper on *Stricture of the Œsophagus*, which he says is met with more frequently in men than in women, and usually occurs in early life. It is not infrequent among children, and a few congenital cases have been observed. Strictures resulting from swallowing hot or acrid fluids are usually found at the upper part of the tube just back of the cricoid cartilage. Next in frequency is the lower portion of the tube near the cardiac orifice of the stomach. The stricture may be single or multiple. He reported thirteen cases.

DR. JOHN E. RHODES, of Chicago, read a paper on *Anosmia.* He said no treatment has been suggested that will relieve a case of *true* anosmia. If dependent upon local conditions, as deformity of nasal structure, excessive hypertrophy, or nasal polypi, surgical measures may result in complete or at least partial relief.

REPORT OF THE COMMITTEE ON OBSTETRICS.

This report was presented by the Chairman, Dr. J. S. Miller, of Peoria, which was a résumé of recent progress. It was followed by papers on *The Logic of Progressive Midwifery*, by B. H. Harris, of Groveland, and the *Parturient State*, by Lucinda H. Corr, of Carlinville.

DR. W. E. CASSELBERRY, of Chicago, read a paper on *Adenoid Hypertrophy in the Naso-Pharynx.* He said in multiplicity of cases, gravity of consequences, facility of operative treatment, and brilliancy of results, the disease which

is invariably known as adenoid hypertrophy in the naso-pharynx, may be said to outrank any other affection of the upper respiratory tract. For pronounced hypertrophy the only satisfactory method of treatment is removal by surgical means.

THE REPORT OF THE COMMITTEE ON GYNECOLOGY

was next called for, and was presented by the Chairman, Dr. L. A. Malone, of Jacksonville. Dr. Malone gave a résumé of the work done in gynecology as offered through the medium of medical journals, societies, monographs, etc.

Dysmenorrhœa.—Most happy results have been gained by the use of the steel dilator in this affection, dilating the cervix from three-fourths to one and one-fourth inches, antiseptic precautions having been taken. Goodell has employed this treatment in 322 cases without any serious mishaps, and with almost invariable and permanent relief.

Tubes and Ovaries.—Abdominal surgery has been in the past few years a fertile field for operation. The sacred precincts of the peritoneal cavity, which but a few years ago, none but the boldest dared to enter, has now become the fit arena for even novices to operate. Since Lawson Tait electrified the world by his wonderful successes, emulators have become numerous everywhere. There is scarcely a hamlet in the United States to-day where may not be found at least one who has opened a woman's belly and erected a tombstone to the memory of his daring. All sorts of mental disturbances and neuralgias have been made a pretext for the operation. Dr. Malone had seen normal ovaries offered as a justification for their removal, the patient being a hystero-epileptic.

Dr. Eliza H. Root, of Chicago, read a paper on

CONSTIPATION AND ITS RELATION TO PELVIC DISEASE IN YOUNG WOMEN.

Constipation, long continued, gives rise to a train of symptoms that present themselves for relief in the daily practice of every active physician; nor does he find any one cause of ill health so difficult to remove. It is an active factor in the production of pelvic disease in women; for, where endocervicitis and even retroversion exist, rapid improvement is made as soon as constipation is relieved. The causes of constipation are varied and arise in childhood from faulty diet, dress, and neglect of elimination. It occurs at the time of puberty when the transition from girl to womanhood gives rise to faulty nutrition and consequent relaxation of all the body tissues. Pelvic disease results from constipation through pressure. The filled and distended sigmoid flexure and rectum press upon blood vessels, nerves and muscles, exerting direct and reflex influences upon the functional activity of the whole economy. Dr. Root reported three interesting cases.

AFTERNOON SESSION.

Dr. Mary H. Thompson, of Chicago, read a paper entitled, *A Few Interesting Cases in Gynecology*, which was followed by a contribution on *The Prevention of Puerperal Mastitis*, by Dr. Ellen M. Heise, of Canton.

Dr. F. H. Martin, of Chicago, read a paper on

HYSTERECTOMY IN MALIGNANT DISEASES OF THE UTERUS.

The operator reported five successful cases operated upon during the last year. His conclusions were: 1. Seek to make an early diagnosis of this dread disease. 2. When the diagnosis is made operate early, selecting vaginal hysterectomy as the operation calculated to give the best results. 3. The legitimate future immediate mortality of this operation in the hands of experts will be as low as high amputation. 4. The ultimate curative results with vaginal hysterectomy must of necessity be the best that it is possible to obtain by operative procedure. 5. Vaginal hysterectomy is indicated in *all* cases of cancer of the uterus, where it seems possible to get beyond the diseased tissue. 6. Choose the open operation; ligate the base of the broad ligament with strong silk and secure its upper two-thirds with lock forceps.

Dr. D. A. K. Steele at this juncture exhibited a patient upon whom he had operated for osteosarcoma of the right scapula.

THE REPORT OF THE COMMITTEE ON DRUGS AND MEDICINES

was read by Dr. John A. Robison, of Chicago. Dr. Robison took for his subject the Treatment of Phthisis Pulmonalis. He said that the therapensis in each case must be planned according to the patient, his social relations, his environments, his wealth, and the judgment of the physician. He presented for consideration the hygienic, climatic, medicinal, dietetic, and surgical treatment of the affection. Under the head of hygienic treatment he tabulated the following means: Respiration exercises, or deep breathing; breathing pure air; gymnastic exercises; sufficient rest and sleep; daily baths; dressing properly. With regard to the climatic treatment, he said that the practice of sending patients away indiscriminately is deplorable, as each case must be carefully studied, and the resort chosen according to the individual temperament, stage of the disease, wealth, and social habits of the patient. A mountain climate is advisable in all cases when there is threatened phthisis with a strong hereditary predisposition, or when there is poor thoracic development. The warm and moist climates, such as the sea-coast or sea voyages, are most suitable for phthisical patients of an excitable and nervous type, or those suffering from insomnia or bronchitis. The warm and dry climates are best suited to sufferers from

phthisis who have heart disease or albuminuria. Surgically there was every reason to believe that drainage antiseptically of lung cavities will be successfully done in the future. Denison, of Denver, reports several cases in which drainage promoted cures.

Other papers which were read are as follows: *Opium in Disease*, by Dr. C. E. Davis, of El Paso; *Catalpa Speciosa*, by Dr. J. Schneck, of Mt. Carmel; *Relation of Eye Strain to Headache and other Nervous Affections*, by Dr. F. C. Hotz, of Chicago; *Empyema of Antrum of Highmore*, by Dr. R. Brown, of Chicago; *Treatment of Posterior Turbinated Hypertrophy*, by Dr. A. E. Prince, of Jacksonville; *Correction of Slighter Forms of Astigmatism*, by Dr. Gardner, of Chicago; *Relation of Nasal Diseases to General Disturbances of Health*, by Dr. H. Gradle, of Chicago; *Diseases of Children—Diphtheria, Intestinal Obstruction*, by Dr. R. J. Mitchell, of Girard; *A Rational Method of Treating Rotary Lateral Curvatures of the Spine*, by Dr. Charles F. Stillman, of Chicago.

OFFICERS FOR 1891.

President, Dr. J. P. Mathews, of Carlinville; *First Vice-President*, Dr. C. C. Hunt, of Dixon; *Second Vice-President*, Dr. F. C. Schaefer, of Chicago; *Permanent Secretary*, Dr. D. W. Graham, of Chicago; *Treasurer*, Dr. T. M. McIlvaine, of Peoria; *Assistant Secretary*, Dr. Geo. N. Kreider, of Springfield.

On motion the Society adjourned to meet in Springfield, third Tuesday in May, 1891.

DOMESTIC CORRESPONDENCE.

The Conference of Medical College Delegates.

To the Editor:—The recent communication of Dr. Davis seems to indicate his belief that there is a possibility, perhaps a probability, of very little good arising from the conference of Medical College Faculties to be held in Nashville. I, at any rate, greatly fear that the attempt will not soon give us a graded compulsory course of three years in all colleges.

The truth is this: The only way to have a high standard of education in all medical colleges, is for each medical school to raise its own standard without waiting for other schools to do likewise. Corporate morality is subject to the same laws and rules of growth as personal morality. So soon as a merchant becomes convinced that to put a 1 lb. label on ⅞ of a lb. of tea is wrong, so soon as he believes that to sell a mixture of terra-alba and sugar for pure sugar is immoral, so soon must he cease to thus wrong the public. His evil doing begins at once when he *knows* he is doing an immoral thing; he cannot wait until all other merchants agree in solemn convention that they will refrain from such fraudulent practices. The same rule applies to medical schools. Just as soon as the college officers believe that a two years' course is a degradation to the school, and a fraudulent and inefficient method of educating physicians, they are forced by the moral law to the immediate adoption of a better method.

The attempt to postpone the right action until all do likewise is unphilosophical, immoral and a stultification of conscience. Let each Faculty, which believes in a three years' course, raise the standard to that which is now adopted by all first-class institutions, and let every man who believes in justice to the public, and the necessity for a three years' curriculum, refuse to hold position as Professor, Lecturer, or Demonstrator in any two year school. The question will thus be at once solved. The slaughter of the innocents arising from the manufacture and sale of short weight physicians will only be stopped by such decided action on the part of persons and of institutions.

We have heard for years resolutions enough; let us now have conscientious action on the part of men and schools. Respectfully,

JOHN B. ROBERTS.

Philadelphia, May 12, 1890.

The International Medico-Legal Congress of 1892.

We have received the following communications from Clark Bell, Esq., of New York, with a request that we publish them:

Office of the President of the Medico-Legal Society of New York,
No. 57, Broadway, N. Y., March 31, 1890.

Hon. James G. Blaine, Secretary of State, Washington, D.C.

Dear Sir: I have the honor to enclose a circular we are sending in the English, French, German and Spanish languages, to the various countries of the world, asking coöperation with the International Medico-Legal Congress, which will be held in 1892 in this country.

Its first session was held in June, 1889, of which I send the preliminary transactions and roll of delegates.

The French circular enclosed shows the officers at this moment, and as Vice-Presidents for the various countries are announced, they will be added to those already appointed. Inspection of the names of the eminent men, who have already lent their names to this project, emboldens me to request the countenance of the American Government, to this movement in aid of this science.

Among foreign peoples, the knowledge of the approval of the Home Government, is of vast consequence to the success of scientific endeavor.

The aid, lent by the French Government, to the Scientific Congresses in Paris last year, gave an

enormous impetus and importance, to that wonderful success, which added new lustre to the glory of France.

We do not desire any pecuniary assistance, from the Government of the United States.

The letters you so kindly sent me last summer were of enormous value to me, in interesting eminent men of science, in the countries of Europe in the movement.

Such a letter of sympathy, with the objects and purposes of our present endeavor, as you can give, will I think be of great value, and will in many countries, especially the Spanish speaking countries on this continent, be of commanding importance.

I am, sir, with high personal regard,

Very faithfully yours, CLARK BELL.

Department of State, Washington, April 17, 1890.

Clark Bell, Esq., President of the Medico-Legal Society, No. 57, Broadway, New York City.

Dear Sir: I have received your letter of the 31st ultimo, enclosing copies of circulars which you are sending to the various countries of the world, inviting coöperation for the Congress, which will be convened in 1892 in the United States, for the discussion of medical jurisprudence.

The importance of such a gathering as you propose cannot, it would seem, be overestimated. The intelligent discussion of scientific questions, especially those which so closely affect the human family, by a body of gentlemen learned in medico-legal science, must prove of especial value, and should be worthy of every effort, which has for its mission the amelioration of the condition of mankind. My individual sympathy in the objects and purposes of your conference is very great, and I trust that the results of such a meeting as you propose, may correspond, to the aims you have in view, as I have no doubt they will. I am, dear sir, very truly yours,

JAMES G. BLAINE.

INTERNATIONAL CONGRESS.

Tenth International Medical Congress.

By direction of Count Arco, the German Ambassador in Washington, the Consul General of the German Empire in New York, Mr. A. Feigel, sends the following, with the request that the medical and secular press of the country give it the greatest possible publicity. It will be noticed that this circular contains a great many particulars not contained in those previously printed.

CONDITIONS AND RULES REFERRING TO THE INTERNATIONAL MEDICAL AND SCIENTIFIC EXHIBITION IN BERLIN, AUGUST, 1890.

1. The Exhibition will be opened 11 A.M., August 2, 1890, and closed, probably, August 11, P.M., in the Landesausstelungs Park; the Sections of the International Medical Congress will meet in the same place.

Provisions will be made for dark chambers, rooms for experimental purposes, and appropriate demonstrations by experts.

The Exhibition is limited to the following objects: New or improved scientific instruments and apparatuses for biological and strictly medical purposes, inclusive of those for photography and spectral analysis applicable to medicine. New pharmacological, chemical and pharmaceutical materials and preparations. New foods. New or improved instruments for operations in medicine, surgery, special branches, electrotherapy, etc. New plans and models of hospitals, convalescent homes and establishments for disinfection and bathing, arrangements for nursing and transport. New hygienic apparatuses. New tables and charts of a statistical nature. Preparations and models. Teaching apparatuses. Medical literature.

Applications are expected before May 15, 1890,[1] and will be received by the Secretary General of the Congress, Dr. Lassar, Berlin N.W. Karlstrasse 19. They must be marked "Ausstellungsangelenheit" and accompanied with a printed visiting or business card containing name and address.

2. Of each application there ought to be two copies. It is requested that it should contain a brief and accurate description fit to be used in the compilation of the catalogue.

3. The decision as to the admission of all or part of the proposed exhibits rests with the special or general boards of organization; they will send an immediate reply.

4. The cost of every square metre or part of a square metre of floor or table surface is 10 marks, of wall surface 6 marks. Two (2) metres in height of the wall are free for those adjoining the wall. Exhibits in the interior of the hall pay for one-half of the size of the walk immediately surrounding, in addition to the space occupied.

5. Tables will be furnished. Cases, shelves, repositories must be procured by the exhibitors under the supervision of the Committee. Electric light, steam power, etc., can be had by special arrangement.

6. Inflammable objects are excluded. Insurance of those admitted will be secured free of cost, if notice of their value have been given.

7. Packing and unpacking is free of expense to foreigners. Great care will be taken, but no responsibility. Expressage by Messrs. Jacob und Valentin, Berlin O. Holzmarktstrasse 65.

8. The exhibits must be delivered on or before July 20. Foreign goods will be free of duty, but certificates—to accompany the goods—ought to be obtained from the exhibition office, Karlstrasse 19.

[1] Count Arco has made such arrangements that applications coming from the United States will be received until the first of July.

FORM OF APPLICATION.

The undersigned, being acquainted with the conditions and rules referring to the International Medical and Scientific Exhibition in Berlin, August, 1890, requests admission for the following exhibits:

Space wanted: { Floor surface, length . . . breadth . . . / Wall surface, breadth. . . height . . .

Exhibition will take place

(a) In own case: Adjoining the wall? Inside? (If the latter, add a diagram.)

(b) On tables to be furnished by the committee: In flat cases? Exposed without them? On shelves? The wall surface above the table is required to the height?

(c) On the floor, without case, etc.

(d) As drawings, diagrams, or in narrow cases attached to adjoining walls?

Value for insurance purposes

Special requests

Brief notes for catalogue

1890. *Name, etc.*

The German Minister, Count Arco-Valley, has requested Dr. William Pepper, of Philadelphia, to announce to the medical press that he has written to Berlin to have the time for the reception of entries for the International Medical Exposition, in connection with the Medical Congress, extended so that those coming from the United States may be received after May 15.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 10, 1890, to May 16, 1890.

By direction of the Secretary of War, the following named officers are detailed as delegates to represent the Medical Department of the Army at the annual meeting of the American Medical Association, to be held at Nashville, Tenn., May 20, 1890: Col. Jedediah H. Baxter, Chief Medical Purveyor; Major Alfred A. Woodhull, Surgeon. The officers named will proceed to Nashville at such time as will enable them to reach there on or before May 20. Par. 4, S. O. 107, A. G. O., Washington, D. C., May 7, 1890.

Col. Edward P. Vollum, Surgeon and Acting Asst. Medical Purveyor, is granted leave of absence for two months, with permission to go beyond the sea, by direction of the Secretary of War. Par. 10, S. O. 109, A. G. O., Washington, D. C., May 9, 1890.

By direction of the Secretary of War, Capt. Henry Johnson, Medical Storekeeper, now on duty at the Medical Purveying Depot, New York City, will take charge of that Depot, and perform the duties of Col. Edward P. Vollum, Surgeon and Acting Asst. Medical Purveyor, during the absence of the latter. Par. 11, S. O. 109, A. G. O., Washington, D. C., May 9, 1890.

By direction of the Secretary of War, Capt. Charles B. Ewing, Asst. Surgeon, is relieved from duty at Washington Bks., D. C., and will report in person to the commanding General, Dept. of the Missouri, St. Louis, Mo., for duty as attending surgeon at those headquarters. Par. 8, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

Capt. Andrew V. Cherbonnier, Medical Storekeeper, is granted leave of absence from June 1, to include October 1, 1890, by direction of the Secretary of War. Par. 4, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

Lieut.-Col. Charles C. Byrne, Surgeon, is granted leave of absence for four months, with permission to go beyond sea, to take effect on or about June 1, 1890, by direction of the Secretary of War. Par. 3, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

By direction of the President, and in accordance with Section 1,246, Revised Statutes, an Army Retiring Board is appointed to meet at the War Department, in this city, at 11 o'clock A.M., on Wednesday, May 14, 1890, for the examination of such officers as may be ordered before it. Detail for the Board: Lieut.-Col. Anthony Heger, Surgeon; Major Charles R. Greenleaf, Surgeon. Par. 6, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

By direction of the President, the Army Retiring Board convened at Ft. Leavenworth, Kan., by War Dept. order dated May 10, 1887, published in S. O. 107, May 10, 1887, from Hdqrs. of the Army, is dissolved, and War Dept. order dated April 26, 1890, published in S. O. 99, April 28, 1890, from Hdqrs. of the Army, directing Capt. John de B. W. Gardiner, Asst. Surgeon, to report to the President of the Board for examination, is revoked. Par. 10, S. O. 111, A. G. O., Washington, D.C., May 12, 1890.

By direction of the Secretary of War, First Lieut. Charles F. Mason, Asst. Surgeon, now on leave of absence, will report in person to the commanding officer of Ft. Logan, Col., for temporary duty at that station. Par. 7, S. O. 113, A. G. O., Washington, D. C., May 14, 1890.

By direction of the Secretary of War, Major Henry M. Cronkhite, Surgeon, is relieved from station at Little Rock Bks., Ark., and assigned to duty at Ft. Lewis, Col., at which post he is now on temporary duty. Par. 10, S. O. 113, A. G. O., Washington, D. C., May 14, 1890.

By direction of the Secretary of War, Major William H. Forwood, Surgeon, is relieved from duty at Ft. Snelling, Minn., and will report in person, on the 27th inst., to the Governor of the Soldier's Home, D. C., for duty as attending surgeon at the Home. Par. 11, S. O. 113, A. G. O., Washington, D. C., May 14, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 17, 1890.

Surgeon B. S. Mackie, ordered to the practice ship "Constellation." May 15.

Asst. Surgeon C. H. T. Lowndes, ordered to the practice ship "Constellation." May 15.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending May 10, 1890.

Surgeon W. H. H. Hutton, detailed as chairman of Board for the physical examination of officers for the Revenue-Marine Service. April 25, 1890. Detailed as chairman of Board for the physical examination of cadets, Revenue-Marine Service. May 9, 1890.

Surgeon George Purviance, detailed as recorder of Board for the physical examination of officers of the Revenue-Marine Service. April 23, 1890.

P. A. Surgeon S. D. Brooks, when relieved at Savannah, Ga., to proceed to Cleveland, O., and assume command of the Service. May 1, 1890.

P. A. Surgeon P. M. Carrington, as soon as physically able, to proceed to Savannah, Ga., and assume command of the Service. May 1, 1890. Leave of absence extended twenty days on account of sickness. May 3, 1890.

Asst. Surgeon G. M. Magruder, detailed as recorder of Board for the physical examination of cadets, Revenue-Marine Service. May 9, 1890.

Asst. Surgeon J. J. Kinyoun, to proceed to Wilmington, Del., on special duty. May 6, 1890.

Asst. Surgeon A. W. Condict, granted leave of absence for eight days. April 12 and 22, 1890.

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ADDRESSES.

ADDRESS ON GENERAL SURGERY.

Delivered at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY SAMUEL LOGAN, M.D.,

OF NEW ORLEANS, LA.

It may be positively asserted that more progress has been made in the Science and Art of Medicine during the last fifty years, than in all the centuries which had elapsed since our profession broke loose from the apron strings of the priesthood and escaped the confines of the barber shop. If this may be truly predicated of our profession in general, the branch of Surgery exhibits this progress in a more recognizable degree than the other chief division, or that of the Institutes and Practice of Medicine I use the words recognizable degree in order to expressly disclaim any intention of assuming that we surgeons are any further in advance than our *confrères*. We are mutually dependent, and must move along the same general line. But our work is more apparent, and hence our progress is more recognizable. We are more than mutually dependent bodies—we are, and we should, for our mutual benefit, never forget the fact—one and the same in our essential aims. It is only for the better accomplishment of these essential common aims that we march in separate detachments. Let us ever keep within hailing distance or disaster will surely overtake us.

Let us also remember that our profession in its entirety is both a science and an art, or if we prefer to so express it, an art based on a correlative group of sciences, consisting of Chemistry, Anatomy, Physiology and Pathology. No true progress can be made in either medicine or surgery unless based on facts and principles derived from these sciences. At every step in our advance we must test our position and take our bearings in accordance with their teaching. Modern methods of thought demand this of us, and it is our boast that we, as a class, are fully abreast, if not in the lead, of modern thought in its rigidly scientific methods. The palmy days of brilliant medical theorists have forever past. No great intellect, with vivid imagination and plausible poetic personality, may now fire the enthusiasm of a horde of followers as he spins some beautifully ingenious theory with attenuated threads of intellectual gossamer wrought out from his own "inner consciousness." If a scientist ventures now to launch forth some fondly nurtured "theory," he is evidently half ashamed of himself, and apologetically christens his bantling a "working hypothesis" only. Modern medicine demands facts—thoroughly tested facts—not theories. Yes, thoroughly, scientifically tested facts are what we require for our guidance in the practice of art. First establish the facts, and the law, or generalization, or theory, if you choose, spontaneously crystalizes aronnd these facts. It is in this direction that the intellect of the civilized world now finds its field of intense and unremitting labor; and it is solely to this fact that we owe the marvelous progress characterizing the social evolution of our age. No class is more imbued with this "spirit of the age" than that we represent; for we recognize the principle that it is only in this way we can strengthen our hands and our brains for the better practice of our art in our efforts towards the amelioration of mankind. Hence, our colleges and our hospitals, our chemical, physiological, pathological, and microscopical laboratories; hence, our specialization of different departments of medicine, our local, State and general societies, and last, but not least, our wonderfully enterprising, laborious, painstaking and brilliant periodical literature, unequaled by that of any other profession. What would we do without our medical journals? Without their aid how could I now stand before you and invite your attention to a consideration of some of the "burning subjects" specially occupying the surgical mind since our last meeting in general conclave?

One of these subjects of commanding importance is that of

GENERAL ANÆSTHESIA.

After prolonged and painstaking trials of many volatile agents we may take it as an established fact that two of the earliest introduced—sulphuric ether and chloroform—have excluded all the others from the field; and the practical question is now presented to each graduate in surgery:

Under which of these two banners shall you enter the fight against the pangs and the pains of necessary chirurgical proceedings? He finds the profession more or less distinctly divided on this subject. In a hitherto futile effort to decide the points of difference a vast amount of labor has been expended. Clinical statistics have accumulated to enormous proportions; and experimental researches involving much careful scientific work have been prosecuted. But, notwithstanding all this, the profession has remained divided as to which agent should be used. In order to test the truth of the alleged greater danger from chloroform anæsthesia, a carefully conducted series of experiments were recently instituted in India, under the auspices of a commission appointed by, and at the expense of, the Nizam of Hyderabad, whose enlightened liberality, thus evinced in the cause of scientific medicine, might well be emulated by the authorities of some communities who claim to represent a higher grade of civilization. This commission—under the lead of Surgeon-Major Lawrie, of the British Army—devoted special attention to the assertion that chloroform was the most dangerous agent on account of its greater liability to produce death by sudden heart syncope. The conclusion they reached was, that when chloroform was pushed to a fatal result, it "always arrests the respiration before the heart."

This seems to have proved a perfect bomb-shell in the ranks of the ether-philites. Our Medical "Thunderer," *The Lancet*, would admit no such conclusion. The liberal Nizam of Hyderabad furnished the means for another set of experiments, inviting *The Lancet* to send a representative to join in the labors of the second commission; and the distinguished Dr. T. Lauder Brunton consented to go. The other members of the commission were Surgeon-Major Lawrie, Dr. G. Bumford, and Dr. T. Rustamji Hakim. They worked at the problem for nearly two months, and after sacrificing 70 monkeys and 360 dogs in the noble cause, they reached the same conclusion as the first commission. This conclusion was unanimous; for, be it noted to the honor of Lauder Brunton, he was not ashamed to acknowledge that his former teaching had been entirely erroneous.

To those who have preferred chloroform it will be particularly interesting to observe that the practical deductions drawn from the results of the numerous and varied experiments made by this commission, agree in the main so markedly with the almost universally recognized rules which have been adopted as the result of experience in the use of this agent in surgery—rules the imperative importance of which can be hardly too much emphasized. The following is a very condensed statement of these coincidences between the more important "practical conclusions" of the commission and the accepted rules for the administration of chloroform.

1. The dorsal recumbent position should be adopted throughout, if the operation admits of it, and if not, this position should be immediately resumed as soon as there is "any doubt whatever about the state of the respiration."

2. No pressure should be allowed by tight clothing, holding the patient down, etc., on neck, chest or abdomen, so as to produce the slightest impediment to free respiration.

3. A thorough dilution of the chloroform vapor with air must be secured from the beginning and to the end. Hence, no complicated inhalers need be used, the napkin simply folded into an open cone best insuring this result. I, myself, do not even approve of the little piece of absorbent cotton inside, preferring to pour the chloroform on the side of the inner surface of the cone, and to leave the opening in the top perfectly free.

4. The administration should be very gradual in the beginning. This method is not only more agreeable to the patient, but prevents the struggling and holding of the breath, which are apt to be accompanied or followed by such deep inspirations as to tend to the reception of an over dose. In this respect the manner of producing anæsthesia by chloroform should radically differ from that appropriate when ether is being used. Chloroform should be given largely diluted and very gradually, ether rapidly and almost undiluted.

5. Should the patient hold his breath from any cause his first succeeding inhalation should be of pure air, or at least very slightly impregnated with chloroform; for the simple reason that this inspiration will be so deep as to take in too large a dose at a time, and thus violate what I would designate as the golden rule in chloroform anæsthetization; namely, the very gradual introduction of the agent into the lungs and the circulation.

6. The commission also approves the accepted test of touching the eyeball to see if the patient's feeling is sufficiently obtunded for the operation to begin, and advise that no operation be begun till this degree of anæsthesia is obtained. The reasons for not doing so are two-fold; surgical shock and alarm are prevented, and the patient is not excited to struggle and resist.

7. The commission say, "The administrator should be guided as to the effect entirely by the respiration. His only object, while producing anæsthesia, is to see that the respiration is not interfered with." In this respect we do not recognize the coincidence alluded to between the "practical conclusions" of the committee and the previously accepted rules for the management of chloroform anæsthetization. Nor do I think that those who continue to use this agent

will be willing to thus entirely ignore the circulation. The eye can watch the respiration and the finger at the same time take frequent cognizance of the pulse stroke, as has been the universal custom hitherto. The two duties are not incompatible, and surely the careful noting of the frequency and character of the pulse must be of no little precautionary service.

8. "If anything interferes with the respiration in any way, however slightly, even if this occur at the very commencement of the administration, if the breath be held, or if there be stertor, the inhalation should be stopped until the breathing is natural again." This important injunction has long received the endorsement of those experienced in the use of chloroform.

9. "If the breathing becomes embarrassed, the lower jaw should be pulled or pushed from behind the angles forward, so that the lower teeth protrude in front of the upper. This raises the epiglottis and frees the larynx. At the same time it is well to assist the respiration artificially until the embarrassment passes off." And, "If, by any accident, the respiration stops, artificial respiration should be commenced at once, while an assistant lowers the head and draws forward the tongue with catch forceps, by Howard's method, assisted by compression and relaxation of the thoracic walls, etc." These propositions are in the main quite in accordance with established usage.

10. The previous administration of alcohol, the commission say, may be resorted to "provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation." This plan was generally adopted by the late Warren Stone, of New Orleans, and many of us still follow his example, especially with those who are debilitated from any cause.

11. It has also been customary with some to give a dose of morphine hypodermatically ten or fifteen minutes in advance. This has also met the approval of the commission. It would seem reasonable that this should not be done unless the fact be known that the patient does not belong to that rather numerous class who suffer severe after-nausea from morphine.

The commission concludes that there is nothing to show that atropine does any good, and that "it may do a great deal of harm."

As a final conclusion the "commission has no doubt whatever, that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

Pretty positive words! And could the busy practitioner of surgery accept with unquestioning faith the deductions thus positively drawn, after painstaking and able experimental research, by those well worthy of our confidence, the question of choice would be settled.

But hardly had the report of this commission fairly reached the general mass of the profession before Drs. H. A. Hare and H. C. Wood published the results of experiments made by them; and these results directly contradict those obtained by the Anglo-Indian Commission. The American experimenters assert that "though 450 pariah dogs in India have died of respiratory failure, an equal number in America have died of cardiac arrest; whilst the records of clinical medicine show that death in the human being from chloroform usually takes place either by primary arrest of the heart or by simultaneous arrest of the heart and the respiration, while in etherization the respiration usually ceases distinctly before the heart's beat."

In this conflict of statements, what are we to say? Shall we assert that all this conscientious work has been in vain, since such opposite conclusions are reached by equally reliable investigators? We trust not. Rather let us hope that further and still more thorough investigations may be the result; and, more important still, let us hope that as an aid to the settlement of this *questio vexata* every case of death under and after the use of either agent shall be carefully noted in all its details, and faithfully recorded in the journals. After all it seems to the speaker that a final settlement of their respective merits can only be reached through such clinical studies faithfully recorded. Some consider that the question has been so settled in favor of ether; but this is denied by large numbers of experienced and able surgeons, and by them such a statement as that in the latter portion of the last quotation (from the American experimenters) is regarded as a *petitio principii*. They deny that clinical records "show that death in the human being from chloroform usually takes place either by primary arrest of the heart, or by a simultaneous arrest of the heart and the respiration, while in etherization the respiration usually ceases distinctly before the heart's beat."

It must be remembered, too, that there are other points to be settled besides the question of sudden death during anæsthesia. If it be granted, for the sake of argument, that chloroform anæsthesia affords a larger proportionate number of sudden deaths, it has yet to be determined to what an amount this ratio must be discounted by the number of deaths attributable to the asserted more serious after effects of etherization, particularly in the stomach and the kidneys. It will be extremely difficult to settle this matter by statistics. The sudden deaths are promptly credited to the agent used; the subsequent deaths may be just as certainly due to the effects of the anæsthetic, but are often attributed to other causes. At least such is the belief of a large number of

competent surgeons, who still think that chloroform is the preferable agent, and who maintain that in the long run it is just as safe as ether, if used with the same caution demanded when we employ any really efficient agent in medicine. Is it not a law, indeed, that our most efficient agents are really most dangerous when handled carelessly? The simple fact, then, that chloroform is the most dangerous anæsthetic is no more an argument for its abandonment than the fact that opium and its alkaloids should be discarded because they are the most dangerous anodynes and narcotics. Electricity is the most dangerous and powerful form of energy. Shall we therefore abandon its use? Rather increase our endeavors to the better control of it for useful purposes. Those who use chloroform admit it to be the most powerful anæsthetic, just as opium is the most powerful anodyne; but they believe it can be so controlled as to safely subserve the purposes of anæsthesia. Have these recent experiments strengthened their position, or not? I will not presume to answer the question, but refer the matter to a "committee of the whole" of our profession, with the repeated suggestion that a continued careful clinical study of the subject, with a conscientious record of the cases, should be considered the binding duty of every operator who uses either agent.

It may be appropriate to also suggest that the assertion of Ostertag, published quite recently (*Deutsche Medizinal Zeitung*, Jan. 16, 1890), to the effect that late deaths in animals from prolonged administration of chloroform resulted from fatty degeneration of the myocardium induced by it, is worthy of further investigation. Deferred deaths from chloroform are, however, very rare; but, nevertheless, everything possible bearing on this important subject should command careful consideration.

LOCAL ANÆSTHESIA.

Not a little excellent work has been done during the year in the way of more exactly defining the qualities and uses of the more recently introduced therapeutic agents; and as illustrative of this fact we note that poisoning by the local use of cocaine has been carefully studied by Dr. A. Wolfler. As a result he has drawn the following practical conclusion: "In small operations on the extremities or trunk a gram of a 5 per cent. solution may be safely injected; whereas in the face, with the exception of the mouth and throat and the hairy scalp, more than two centigrams should never be used." (*Wiener Med. Woch.*, No. 18, 1889.)

ANTISEPSIS.

As a result of his indefatigable labors in this line, Prof. Lister presents a new antiseptic for our trial, namely, a double cyanide of zinc and mercury. Its advantages are claimed to be superior to any antiseptic hitherto used in the following particulars: It is non-volatile, unirritating, insoluble in water, but soluble in 3,000 parts of blood serum, and a solution of 1 to 1,200 is sufficient to keep animal fluids permanently free from putrefaction, "though it possesses but little germicidal value;" but this defect is remedied by using in the preparation of the gauze a solution of 1 to 4,000 of bichloride, "enough to be germicidal, but too weak to be markedly irritating." Prof. J. W. White has used it with satisfaction, and a description of the method of preparing the gauze will be found in the *American Journal of Medical Science* for January, 1890, p. 82. Anything coming from such a source, and with such American endorsement, should receive our careful consideration.

A thoroughly efficient antiseptic for general use without irritative qualities is certainly a desideratum; and if this proves to be such an agent surgery will owe another debt to the great apostle of scientific surgical cleanliness, which is the sum and substance of antiseptic surgery.

And in this connection it will be appropriate to notice the admirably practical researches recently made by Assistant Surgeon Joseph Kinyoun, and embodied in a report published by the Marine-Hospital Service in its "Weekly Abstract of Sanitary Reports" (Vol. iv, No. 47). It is on the subject of "Microörganisms in Finger Nail Dirt," and specially deals with the danger lurking about the finger nails of hospital nurses. The subject well merits the closest investigation, and is of vital importance not only to the surgeon but to the obstetrician, not only in hospital service but in private practice. If the statement made some years ago by a distinguished gynecologist, that many a woman's death warrant was carried to her under the finger nails of her medical attendant, be true, what need we not fear from the ignorant, and not infrequently grossly uncleanly nurses outside as well as inside of hospitals? Dr. Kinyoun, in this report, gives startling confirmation of these most reasonable fears. Permit me to quote briefly from a synopsis of his report to be found in the *New Orleans Medical and Surgical Journal* for February, 1890, p. 591:

"The examinations were so timed as to take the nurses when they were making or assisting in dressings, or just before an operation. In all twenty-seven nurses were examined, and of these only two carried no microörganisms in the dirt under their finger nails." Again: "A careful bacteriological examination was made of the walls and tables with which the hands of the nurse had not come in contact, and in no instance were there any pus organisms found. Whereas, on the other hand, the articles which were used by the nurse, such as irrigating tubes, basins, etc., including coverings to surgical dressings, gave pus microorganisms."

How are we to avoid these unseen dangers? The report deals with this question by the following experiments: After the hands of all the nurses had been thoroughly washed with soap and warm water, they (the hands) were "infected" with staphylococcus pyogenes aureus, then scrubbed well with soap and warm water, then treated for six minutes with alcohol containing (1 to 3,000) bichloride, then in bichloride solution (1 to 500), (1 to 1,000), (1 to 1,500), (1 to 2,000), (1 to 2,500), respectively, for another six minutes, and then neutralized in the usual manner. The Esmarck tubes made from the nail scratchings of the hands subjected to (1 to 500), (1 to 1,000), (1 to 1,500), remained sterile, but in the others there were many colonies of staphylococcus pyogenes aureus.

Let us hope that so important a matter will attract the attention of other bacteriologists. Should these examinations be confirmed, we will be able to congratulate ourselves on the possibility or soon having it in our power to formulate definite rules for our guidance in such matters.

DRESSING OF WOUNDS.

Some very remarkable statements in regard to the "Dry Method of Wound Treatment" have been made by Dr. Lauderer, of Leipzig, in an address before the German Congress of Surgeons. He asserts that he has had primary union in ninety consecutive cases, many of great importance, as resections, amputations, etc. No fluid is allowed to touch the wound. Dry aseptic gauze is used in place of moist sponges and irrigating fluids, and pieces of the gauze are simply applied to the wound.

The advantages claimed are as follows: 1. The patient is not exposed to wet and cold. 2. The loss of blood is minimal. 3. Absorption of antiseptics is not possible. 4. Time of operation is decreased. 5. Rapid recovery, only one dressing being necessary, and that only if non-absorbable stitches are used. 6. Saving of surgeon's hands.

The speaker has employed this method in a limited number of cases, and so far with satisfactory results.

The question of drainage or no drainage in wounds is still *sub judice*, with able advocates on both sides; but the majority of surgeons still incline to its judicious use in all cases where perfect asepsis is uncertain, and where the surfaces cannot be kept supported in absolute and continued juxtaposition. A recent paper read before the Société de Chirurgie (*L'Union Médicale*, May 9, 1889), by Jules Boeckel, is worthy of note in this connection. He reports the results of thirty-three major operations treated without drainage, with only two deaths, and these not attributable to anything connected with the technique of the operations, one case dying from pneumonia and the other from tubercular meningitis. Some of these cases were such as would seem specially to require drainage; as, for instance, a case of resection of the knee and one of amputation of the breast, with the removal of axillary and supra- and infra-clavicular glands, with division and suturing of the clavicle to admit of the removal of these glands. He sometimes puts in what he calls a "pseudo drain" made of a pencil of iodoform. Generally one dressing sufficed.

SURGERY OF THE HEAD AND SPINE.

During the last twelve months there seems to have been started a rather conservative reaction from the hopeful tone given to cerebral surgery by the combined influence of antiseptic procedures and the more or less successful study of the subject of functional brain localization. Progress in a new field is apt to be carried, by the very enthusiasm which insures success, beyond the bounds of prudence, necessitating a halt and a careful survey of the new ground freshly conquered. In the new cerebral surgery this survey is now being made. Bergmann's work on the "Surgical Treatment of Diseases of the Brain," very recently issued, is an able exponent of the present attitude of surgical thought in this regard. Time does not permit an adequate consideration of this very interesting and important matter, but I may be permitted to call your attention to a few points illustrative of the general tendency alluded to, which I cull from a review of the above named work in THE JOURNAL of this Association for August 31, 1889. He warns very strongly against opening the skull, "unless a definite diagnosis has been made" in supposed abscess of the brain.

Again: "The author is much less hopeful regarding surgical relief for tumors of the brain. The tumor may be diagnosed, but it may be difficult to locate it definitely. It is also impossible to determine whether it can be enucleated, and, if this is possible, whether or not it will recur." In the 100 cases of tumor collected by H. White, only "nine might have been relieved by surgical operations, but of these seven could not have been diagnosed on account of their location. In cases in which a tumor cannot be located definitely, exploratory trephining is not justifiable. Aside from the possibility of not finding the tumor there are two great dangers, viz: hæmorrhage and secondary œdema. All of these principles are confirmed by clinical histories of cases observed by himself or others."

And yet, on the other hand, a tendency has been shown by certain eminent alienists to induce us to extend the field of operative cerebral surgery in a new direction. In an able editorial in THE JOURNAL of this Association for February, 1890, allusion is made to a case, reported by Dr. T. C. Shaw, of general paralysis of the insane, in which

trephining and incision of the dura mater was practiced. This was done under the conviction—confirmed by Ferrier, who was also consulted in the case—that there were irritative processes in the upper layer of the convolutions, with later pressure symptoms; and as nerve stretching (suspension?) had proved beneficial in ataxia, brain stretching—that could only occur by increasing its space for expansion—would relieve the pressure of the cerebral fluid and diminish the arterial tension that the sphymograph has shown existent in such cases.

Mr. Harrison Crippe made an opening one and a half inches long by three-quarters wide and cut the dura mater, when "considerable quantity" of subarachnoid fluid escaped. By the tenth day the wound had healed, and no cerebral symptoms had been present after the operation. Though there was but slight improvement in the bulbar symptoms, those of *folie de grandeur* no longer existed. The patient was seen by Dr. Clifford Allbut, who agreed with Dr. Shaw that the man was no longer insane.

The editor continues the subject by mentioning somewhat analogous proceedings in a case of syphilitic paresis, previously reported by Tuke, who saw it in consultation with Dr. Muirhead, in which "the hallucination ceased for five days," but relapsed and recurred, and no benefit resulted. But in this case the opening was not so large as in the other, and no attempt at drawing off the subarachnoid fluid was made, "an omission that Dr. Tuke would have remedied had the case remained under his care."

As might have been expected, this rather radical departure from the usual hopeless programme in the treatment of such cases has been promptly met with opposition and condemnation on the part of other alienists, and to this department of our profession we as surgeons must mainly leave the decision, only endorsing the concluding portion of the editorial from which I have derived the above facts, *i. e.*: "But the gentlemen associated in these two cases occupy positions that entitle them to a respectful hearing from the profession, and the operation must be condemned, not by theory, but practice."

"A suggestion, supported by the report of a very successful case, as to the repair, by transplantation, of osseous defects in the skull after trephining, comes from Dr. R. Jaksch (*Wiener Med. Woch.*, No. 38). He used, with every antiseptic precaution, the skull bones of a gosling a few days old. He purposely left the wound open in order to observe exactly what occurred, and was certain that 'vitality was preserved in the bone plates, and that the ossification of the opening in the skull proceeded from them. The transplanted bone plates effected an organic connection with the surrounding parts.'" (Jour. Am. Med. Ass., Dec. 14, 1889.)

It is not improbable that we will find it best as a rule, in transplanting operations in general, to select our materials from the tissues of the young animal, where, it is reasonable to suppose, the more active proliferating tendencies characterizing all the nutritive processes at that period of life would favorably effect the graft.

The subject of surgical intervention in diseases and injuries of the spinal column and cord has for some years been attracting a large share of interest. Stimulated by the successes achieved by Horsley, Macewan and others, in cases sometimes of apparently desperate character, many others have entered the field and are prospecting it with some success; but sufficient clinical data have not yet been accumulated on which to formulate definite rules. Good work, however, is being done by able hands, which cannot but result in a more successful management of these most distressing cases. At the last meeting of this body the matter was well handled by the Chairman of the Surgical Section, Dr. N. P. Dandridge, of Cincinnati, in his address to the Section, and Dr. J. William White, of Philadelphia, read an able paper on the same subject. Allingham has since reported two cases of operation in cases of injury (*Lancet*, June 1, 1889), and published his views in relation to the points still under discussion, in the following general terms: He believes "1. That by trephining it is evident that inflammatory ascending changes are prevented. 2. That no bad symptoms follow from opening the dura mater and allowing the cerebro-spinal fluid to flow out. 3. The operation, although tedious, is not a difficult one to perform, and does not in any way diminish the chance of recovery."

It may be safely predicted that, as the study of this department of surgery becomes more developed, it will be found that the same general principles will apply here as in the management of analogous injuries and diseases of the skull and its contents, modified, of course, by the differences in the anatomical conditions.

SURGERY OF THE THORAX.

Nothing specially worthy of remark has been developed in very recent years in this division of surgery.

SURGERY OF THE ABDOMEN.

So much is being done here, and so numerous and able are the publications and new devices offered for facilitating and improving the technique of the many operative procedures now practiced in this region of the body, that it is difficult for me to select the points most appropriate for consideration on this occasion.

What may be termed therapeutic laparotomy is one of the latest developments of abdominal surgery. At a recent congress of surgeons in Europe (Journal of the Am. Med. Ass., Dec. 21, 1889, p. 899) the "surgical treatment of peri-

tonitis was considered a modern triumph," and numerous important communications on the subject were presented. Mr. Lawson Tait uses the following language in a recent publication: "I have had more than one occasion to draw attention to the astonishing disappearance of tumors, often of large size, after a mere exploratory incision." "The cases in which I have seen tumors disappear in this way have mainly been cases of diseases of the liver, spleen, and head of the pancreas," and "at least one case of uterine myoma." "That a therapeutic change is effected in the peritoneum itself by the mere opening of the cavity is now universally recognized in the treatment of what we call tubercular peritonitis by abdominal section. I have now had a large experience on this point, and can say positively that we can cure permanently and speedily cases that have gone even as far as suppuration, by opening and cleansing. . . . And in the non-purulent cases I very often do no cleansing at all, but merely empty out the serum and put in a drainage pipe. Yet the great majority of these cases are cured by these simple means." He further states that "four times in my life I have opened the abdomen for the purpose of removing enlarged spleens, and in every one of the instances I have been deterred from proceeding with the operation by reason of the hopelessness of the outlook for the patient. Strange to say, in three of the four patients the tumor has disappeared, and they are now to my knowledge—or were, at least, quite a short time since—in perfect health; the fourth succumbed to the exploratory incision."

These are certainly remarkable statements, and would, notwithstanding the high authority from which they come, be received with a natural incredulity; but he is not alone. Bouilly reports six cases of puerperal peritonitis to the last French Congress of Surgeons, which were treated by incision, the hot water douche, and dressing with a large drainage tube and antiseptic material (*Archives de Tocologie*, No. 12, 1889), and other writers in various parts of the world are taking up the subject and report more or less favorably in regard to it. It will not be hazarding too much, then, to say that what may be designated as therapeutic laparotomy has come to stay, though perhaps with but a limited yet important field for its application, and that the rules and principles to guide us in its performance are being rapidly formulated.

Speaking of therapeutic laparotomy calls to my mind the fact that what may be with equal propriety designated as prophylactic laparotomy is in some quarters decidedly growing into favor as applied to certain cases of relapsing typhlitis and appendicitis. It is evident that year by year there is an increasing tendency in favor of removing the appendix vermiformis in those cases where repeated inflammations of this useless relict of a previous stage of human evolution threatens the life of the patient from perforation and consequent acute peritonitis, or from dangerous suppurative cellulitis. It is probable that the operation may have been, and may continue to be, performed unnecessarily, for we have all seen cases where the appendicitis has repeated itself at longer or shorter intervals, with full recovery and finally no recurrence for years, if at all. Then there are other cases characterized by graver symptoms, more frequent recurrence, and with localized tendencies of greater persistency. These latter are more likely to be followed by typhlitis, perityphlitis, or peritonitis of a very dangerous type, resulting from perforating ulceration. These more serious cases are the ones in which a prophylactic laparotomy for the removal of the appendix would seem most appropriate.

In the pathology of this trouble, we may notice a marked analogy to the relations recognized to obtain between the various degrees of salpingitis and pelvic peritonitis, and pelvic cellulitis. In each case there is a tube readily retaining noxious matters so hidden away from the general current, if I may so express myself, of the mucous surface to which it belongs, as to favor the retention of such matters. In each case such retention soon invites inflammatory action, which then tends either to the production of localized peritonitis with adhesions of surfaces, or neighboring cellulitis, or both peritonitis and cellulitis, producing a vast variety of results differing in importance in each case. Just as pelvic peritonitis, pelvic cellulitis, pelvic abscesses with all their possible complications, may have their origin in salpingitis—frequently gonorrheal in character—so does appendicitis produce typhlitis, perityphlitis—which is lumbar cellulitis—perforating stercal abscesses, cellulo-peritonitis or general peritonitis from perforation.

It would seem that the same general surgical principles should apply to both classes of cases, modified to suit the differences in anatomical relations. As the gynecologist should only remove the tubes when other means of relief prove unavailing, and the life or the usefulness of the woman demands it; so the operation of appendicectomy—if I may be permitted to suggest the word—should be reserved for the cases where frequent recurrence and increasing gravity threaten to end in the dangerous results of perforation or suppuration. Trevis, in England, (*British Med. Jour.*, Nov. 9, 1889); and Senn, Jour. Am. Med. Ass., Nov. 2, 1889), McBurney, (*New York Med. Jour.*, Dec. 21, 1889), and Weir, *Med. News*, March 1, 1890), in America, have contributed able papers on this interesting subject within the last year well worthy of the study of practitioners of medicine as well as of surgeons.

The principles involved in the resort to lapar-

otomy for traumatism, as well as the rules for the technique of the various abdominal operations to repair injuries or remove obstructions, etc., are yearly becoming more definitely established; but this field is too extensive for me to enter, and too important to be cursorily considered. The comprehensive paper read before the Surgical Section last year by Prof. T. S. N. Morton, of Philadelphia, and the work published since by Prof. N. Senn, of Milwaukee, on "Intestinal Surgery," give a full study of the subject up to date, and should be read by all medical men who desire to be abreast of the times in regard to this important advance in modern surgery.

There are many other matters, gentlemen of the Association, to which I am tempted to allude, but time admonishes me that I must bring this Address to a conclusion ere your patience be entirely exhausted. All the subjects which have been brought to your attention have much in them of common interest to all branches of medicine. Indeed, in the vast range of our activities, it would be difficult to find any important question whose successful investigation is not of more or less service to each and every department or specialty of the profession. We are thus again reminded of the fact—alluded to in my introductory remarks—of the absolute unity of the medical profession, notwithstanding the number of special branches into which this working brotherhood is divided. Let our specialist never forget this fact, or he will soon wander out of allignment with scientific medicine; and let us all ever cherish this feeling of unity in diversity, remembering the great cause in which we fight, and that whatever advances be made in one part of the field must beneficially effect the whole line of battle. He who keeps ignorant as to how far all the divisions of the army have advanced, or what strongholds they occupy, will be soon irretrievably lost in the rear.

ADDRESS OF THE CHAIRMAN OF THE SECTION ON STATE MEDICINE.

Delivered at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY JOHN B. HAMILTON, M.D., LL.D.,

SUPERVISING SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE OF THE UNITED STATES.

Gentlemen:—I congratulate you, on this annual reunion, that we have met in a city famous for its beauty, its salubrity, its educational institutions, its boundless hospitality, its "Hermitage," and not least that we are here in the home of that veteran of sanitary science who so ably presided over the deliberations of this Section last year, and whose presence among us to-day is at once an inspiration and a source of pleasure.[1]

[1] J. Berrien Lindsley, M.D.

In accordance with the time-honored custom it becomes the duty of the Chairman of this Section to give a short address, and I assure you that addressing so distinguished a body, largely composed as it is of medical gentlemen who make the business of public health their chief business in life, is a matter of no little anxiety.

First of all let me thank you for the honor conferred upon me by election to the Chairmanship of this Section; but I esteem it less a personal compliment than a recognition of the great medical service of which I happen to be, at the present time, the commanding officer; a service, I may say, whose members are, to a man, enthusiasts on the subject of public hygiene, and whose labors, I trust, will reflect credit upon their country and their chosen profession. Owing to the peculiar relations which the Marine-Hospital Bureau bears in relation to the public health in this country, it is perhaps fitting that I should refer somewhat to the operations of that Bureau during the past year, and briefly sketch what changes have taken place since our last meeting in Newport.

Largely through the favor and support of the American Medical Association, and especially of this Section, Congress has strengthened the hands of the Bureau by enactments which have come in what I may truly call its developmental stage, for in the very nature of things it is impossible that its development can ever be completed; for with equal pace with the general diffusion of knowledge and the advancement of sanitary science new problems arise for solution, and new factors of extension and for the prevention of disease are presented for consideration.

The work of the Marine-Hospital Bureau in public health matters during the year has been confined to increasing the facilities at the different quarantines for treatment of vessels, the publication of a weekly abstract of sanitary reports, with which most of you are familiar, and the increasing of the facilities for laboratory work. There are two laboratories now fitted up with ample appliances for bacteriological work. One of them is intended for a general hygienic laboratory, and is at present located in New York. It is greatly desired that this laboratory shall be removed, at no distant day, to the National Capital and placed in a suitable building, where its usefulness may be greatly increased and its work conducted under the more immediate supervision of the Bureau. The other laboratory has been established at the Key West Quarantine Station, on Tortugas Key. It is intended that the questions connected with the etiology of yellow fever shall be assigned to this laboratory, while the one at New York is for general hygienic work. Special investigations have been conducted at the New York laboratory on the hot air treatment for pulmonary phthisis, a detailed account of which was published in the

Abstract of Sanitary Reports for September 6, 1889; on various sources of infection in surgical wards; on specimens that have been referred to the laboratory from different stations, and the careful investigations of the cases of malarial and enteric fevers occurring at the Marine Hospital at New York, for the purpose of establishing the presence of plasmodium malaria in the blood, and of the bacillus of Eberth in the spleen or intestinal canal. In the latter investigation Dr. Kinyoun gives the following conclusions:

1. Malarial and enteric fevers are not antagonistic to each other.

2. A differential diagnosis between the two diseases is sometimes impossible.

3. There exists a mixed form of infection which can be diagnosed by means of bacteriological and microscopical examination.

An interesting observation as to the therapeutical effect of cobra poison is now going on at the laboratory. The origin of this investigation is as follows:

A little over a year ago Mr. Peroux, of Calcutta, wrote to the Bureau, stating that the natives in India were in the habit of treating cholera in its commencement with minute doses of a substance which proved to be cobra poison, and that the treatment had seemed to be pretty generally successful. This statement was made with a request that the Government would investigate the matter with a view of ascertaining the action of cobra poison on the cholera bacillus. After some difficulty and the lapse of some time a considerable quantity of the poison was procured and is now being examined. The experiments are not completed, but Dr. Kinyoun has informed me that the cobra poison, in a very minute quantity, is a germicide of extremely high power, and that it is fatal to the development of cholera germs. Control experiments are now going on, and he hopes to be able to make a complete report on this subject by the close of the present fiscal year.

THE INTER-STATE QUARANTINE ACT.

The President signed the Inter-State Quarantine law March 28, and with this law the general measures advocated for some time past are completed. The Act of April 29, 1878, inaugurated the system of reports from our consuls abroad, and prohibited the entry of infected ships. The Act of August 1, 1888, established United States quarantines wherever the sanitary defenses of our coast seemed incomplete, and the present law provides that when it shall appear to the satisfaction of the President that cholera, yellow fever, small-pox or plague exists in any State or Territory, and there is danger of the spread of any of those diseases to any other State or Territory, then regulations for the prevention of its extension shall be framed by the Supervising Surgeon-General. When these regulations are approved by the Secretary of the Treasury and the President, they are binding upon the general public, and specifically upon officers of the Government, common carriers' agents, officers and employés. A severe penalty is prescribed for violation of the regulations so framed. Another feature of this new law is the fact that violations of any of the general quarantine laws of the United States are made punishable offenses. It was a radical defect in the law of 1878 that no penalty was prescribed for the violation of its provisions, and in cases actually tried no fines could be imposed.

Taking the three acts as a whole, there is now authority for the exercise of governmental control whenever any extraordinary emergency shall require it; and for the performance of the ordinary quarantine service and the collection of sanitary information the Marine-Hospital Bureau is greatly strengthened by the new Act. The following is its text:

AN ACT TO PREVENT THE INTRODUCTION OF CONTAGIOUS DISEASES FROM ONE STATE TO ANOTHER, AND FOR THE PUNISHMENT OF CERTAIN OFFENSES.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That whenever it shall be made to appear to the satisfaction of the President that cholera, yellow fever, small-pox or plague exists in any State or Territory, or in the District of Columbia, and that there is danger of the spread of such disease into other States, Territories, or the District of Columbia, he is hereby authorized to cause the Secretary of the Treasury to promulgate such rules and regulations as in his judgment may be necessary to prevent the spread of such disease from one State or Territory into another, or from any State or Territory into the District of Columbia, or from the District of Columbia into any State or Territory, and to employ such inspectors and other persons as may be necessary to execute such regulations to prevent the spread of such disease. The said rules and regulations shall be prepared by the Supervising Surgeon-General of the Marine-Hospital Service, under the direction of the Secretary of the Treasury. And any person who shall willfully violate any rule or regulation so made and promulgated shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not more than five hundred dollars, or imprisonment for not more than two years, or both, in the discretion of the court.

SEC. 2. That any officer, or person acting as an officer, or agent of the United States at any quarantine station, or other person employed to aid in preventing the spread of such disease, who shall willfully violate any of the quarantine laws of the United States, or any of the rules and regulations made and promulgated by the Secretary of the Treasury as provided for in section one of this act, or any lawful order of his superior officer or officers, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not more than three hundred dollars, or imprisonment for not more than one year, or both, in the discretion of the court.

SEC. 3. That when any common carrier or officer, agent, or employé of any common carrier shall wilfully violate any of the quarantine laws of the United States, or the rules and regulations made and promulgated as provided for in section one of this Act, such common carrier, officer, agent or employé shall be deemed guilty of a misdemeanor, and shall, on conviction, be punished by a fine of not more than five hundred dollars, or imprisonment for not more than two years, or both, in the discretion of the court.

Approved March 28, 1890.

But one opportunity has been had, up to the present time, for carrying into effect the provisions of this Act. The State Board of Tennessee, having had it reported that an epidemic of small-pox was prevalent in an adjoining State, and that the measures for its control were not sufficiently strict, made application to the Bureau to cause such measure to be taken as would prevent its spread to their State, but investigation proved that the original reports were groundless; hence no action was taken.

The United States has now assumed the duty of inspecting the immigrants bound for our shores, a duty heretofore imposed on the State authorities, and it will be possible to have a much better sanitary surveillance over them than heretofore. This step constitutes, in my judgment, a distinct advance in the sanitary defenses of the country.

EPIDEMIOLOGY.

No serious epidemic of yellow fever, or cholera, or small-pox has occurred within the limits of the United States during the present fiscal year, although some isolated cases of yellow fever have appeared at Key West. At the latter place it appears beyond doubt, from recent investigations by Sanitary Inspector Posey, that, owing to the local conditions, the city of Key West is in danger of becoming a centre for the dissemination of yellow fever. This is all the more deplorable from the fact that it appears from his report that this arises from lack of the plainest observance of hygienic rules. The use of cess pools within the city limits, bad water supply, entire lack of drainage, general lack of municipal cleanliness, affording favorable conditions for the propagation of the hypothetical germ of yellow fever. It is believed, however, that as its condition is now well known not only in Florida, but throughout the United States, the local authorities will be stimulated up to the point of placing this city in a proper hygienic condition. No city in the Union is more favorably located by nature for a sanitarium than the city of Key West. The beautiful island is crowned by royal palms, bathed in sunshine, and fanned by the sea breezes and steady trade winds. In a region of perpetual summer, its atmosphere is always balmy. The island itself is a coral rock, on which but a small amount of alluvium is found, sufficiently high to insure good drainage. There is no reason why Key West should not be a terrestial paradise if the inhabitants so willed it and would only take the necessary steps to perfect its hygiene, raze its hovels and build better dwellings.

A detailed account of the sanitary condition of Key West will be found in the Abstract of Sanitary Reports for March 14, 1890.

INFLUENZA.

An epidemic most serious in its results, but, singularly enough, entirely free from the production of a panic, was the epidemic of influenza which swept over this country during the past fall and winter. Many persons acquainted with the history of previous epidemics of influenza were inclined to make light of it at first, and to predict the most trifling consequences; but it was found that the mortality from pneumonia, from phthisis, and from respiratory affections generally was very much increased, and it soon became known as more destructive than those diseases, apparently more dangerous on account of these collateral effects mentioned. To the epidemiologist the course of influenza, viewed in the light of modern bacteriology, seems one of the most wonderful phenomena of nature. That an epidemic having arisen in one of the most remote parts of the globe should suddenly, in a few weeks, extend itself over so vast a space, is surely worthy of the most attentive study. Through the State Department I hope, at no distant day, to be able to ascertain in what part of the world this influenza first made its appearance; but as yet it has not been traced beyond its original appearance in St. Petersburg, Russia, in November, 1889. A statement has appeared, however, from Danish sources, to the effect that the disease was in Iceland in May, 1889. This report, however, has not been confirmed. The legation at St. Petersburg has been written to obtain from Russian sources an account of the origin of this epidemic. So far as is known, no inhabited country has escaped an attack of the disease, and although originating in the North, yet the scorching sun of the tropics appeared to have no influence in arresting its progress. From the northern latitudes to the tropics, thence to the extreme south, westward to the Polynesian island and the Indian ocean, persons, and in some instances animals, have been affected by the disease. As might have been expected, it proved much milder in the tropics than in the higher altitudes, but its origin is as yet unknown, and although a particular bacillus has been assigned as the potential factor in its causation, it is as yet unaccepted.

LA NONA.

Another disease is reported in the public press to exist in Europe in circumscribed localities, under the name of "nona," and there is confirmation of it in medical journals, but none has been officially reported. It has been stated to be in this country, but the experience of the Bureau in the investigation of epidemics thus unofficially reported has been entirely negative. Many sensational reports are printed concerning alleged terrible epidemics, which on investigation turn out to be simple affections sufficiently well known and entirely without the province of local, State or National health officers. Dr. Broun, in the *Deutsche Medicinische Wochenschrift* of March 27, 1890, describes the disease, the principal symp-

tom of which is prolonged sleep. Pneumonia and meningitis occur simultaneously. All the cases reported have been fatal, and it is regarded as a combination of pneumonia and cerebro-spinal meningitis, perhaps due to the causes of influenza.

LEPROSY.

The American Public Health Association, at its meeting last November, passed a resolution requesting that the National Government take some means to prevent the introduction of leprosy into the United States. It had been known for some time that leprosy was increasing perhaps throughout the world, and this view would seem to obtain from the recent reports concerning its great increase in New Caledonia and other parts of the world where lepers, owing to increased facilities of transportation, find their way, and it was believed that the leprous settlements in the United States owe their origin to direct importations. While there exists no power in the National Government to seize a leper and confine him, there is ample power to prevent his coming within the limits of the United States. Under the Act of April 29, 1878, and under the more recent Inter-State Commerce Act, it will be possible to restrict his transportation from one State to another, provided State Boards of Health shall desire to coöperate. Without their coöperation it would be impossible, without an expense entirely out of proportion to the public necessity. On two occasions, I have visited the leper hospital of San Lazaro, in Havana, and have become convinced that the true policy of the country should be the confinement of all lepers on a public reservation set apart for them. The Sisters in charge of the hospital of San Lazaro assured me that no instance of transmission of the disease had been known, but the great number of lepers running at large in the Island of Cuba shows that the disease is propagated in some manner, and when I discovered that in this hospital various articles of bric-a-brac, wearing apparel, and other things were manufactured for sale and distributed throughout the Island, the means of its transmission did not seem far to seek. Moreover, these lepers at San Lazaro are not strictly confined to the hospital, such as are able to travel being allowed to go out on permit from time to time, and the discipline did not seem to me at all rigorous. In fact, the incarceration of a leper in this magnificent hospital seemed to be a guarantee that he was for the rest of his life to be provided for in comparative luxury. In my opinion the confinement of the lepers on a public reservation large enough to give ample space for their segregation, the entire separation of the sexes, and to give them opportunity for outdoor agricultural pursuits, is the true solution of the problem of what we are to do with the lepers in this country.

Under present regulations, no leper will be permitted to land in any vessel coming into the United States. The Circular in which this regulation was formulated reads as follows :

CIRCULAR.

REGULATION TO PREVENT THE INTRODUCTION OF LEPROSY.

1889. Department No. 130.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE.
WASHINGTON, D. C., DECEMBER 23, 1889.

To Medical Officers of the Marine-Hospital Service, Collectors of Customs, and others Concerned:

The National Quarantine Act, approved April 29, 1878, entitled. "An Act to prevent the introduction of contagious or infectious diseases," provides that no vessel or vehicle coming from any foreign port or country where any contagious or infectious disease exists, or any vessel or vehicle conveying persons or animals affected with any contagious disease, shall enter any port of the United States, or cross the boundary line between the United States and any foreign country, except in such manner as may be prescribed.

Attention is now directed to the increased prevalence of the contagious disease known as leprosy in several foreign countries, and the danger of its increase in the United States through the immigration of persons affected with leprosy, and by direction of the Secretary of the Treasury the following regulation is framed under authority of the foregoing Act, subject to the approval of the President, to protect the people of the United States from the introduction of leprosy:

1. Until further orders, no vessel shall be admitted to entry by any officer of the customs until the master, owner, or authorized agent of the vessel shall produce a certificate from the health officer or quarantine officer at the port of entry, or nearest United States quarantine officer, that no person affected with leprosy was on board the said vessel when admitted to free pratique, or in case a leper was found on board such vessel, that he or she with his baggage has been removed from the vessel and detained at the quarantine station.

2. Medical officers in command of United States quarantines are hereby instructed to detain any person affected with leprosy found on board any vessel, but such officer will permit the departure on outgoing vessels of persons detained at quarantine in pursuance of this regulation, provided such vessel shall be bound to the foreign country from which the said leper shall have last sailed.

JOHN B. HAMILTON,
Supervising Surgeon-General Marine-Hospital Service.

Approved:
WILLIAM WINDOM, *Secretary.*

Approved:
BENJ. HARRISON.

Although perhaps only lightly contagious, it is clear to my mind that leprosy is inoculable, and for that reason, dangerous. At any rate, it is evident the country will not suffer if leprous immigrants are denied admission. Since the issuance of the Circular, one leper has been stopped by the Boston quarantine authorities. While this address was being written a report of a leper at Evansville, Ind., was received. The origin of this case has not yet been determined. The patient is a steamboatman, a native of the United States.

At the last meeting of this Section, the writer introduced a resolution which had previously been formulated at the Montgomery Quarantine Conference of 1889, in regard to international responsibility. This resolution, it will be remembered, was unanimously adopted by the Section, referred to the Association, and by the Association adopted. It for the first time distinctly announced the doctrine that a nation was responsible to other nations for maintaining a plague centre in its own territory. The paper which I read in support of the resolution, in this Section, has been reproduced in France, and read with approval to the Société Française d'Hygiene of Paris, by the distinguished Secretary-General, Dr. De Pietra-Santa. I subsequently had the opportunity of further elaborating this as a principle of international law, and presenting it to the Honorable the Secretary of State for transmission to the Committee on Quarantine of the International American Conference. It does not appear, however, to have borne fruit in that body, for the Committee on Sanitary Regulations reported to the Congress the following recommendations, which it will be seen have no reference to this proposition:

The International American Conference, considering:

That taking the existing state of the relations between the nations of America, it is practicable as it is advisable for the promotion of these relations, to establish perfect accord with respect to sanitary regulations;

That the greater part of the ports of South America on the Atlantic are guided and governed by the decisions of the International Sanitary Convention of Rio Janeiro, of 1887;

That although it does not appear that the plans of the Sanitary Congress of Lima, of 1889, have passed into the category of international compacts, it is to be hoped that they will be accepted by the Governments that participated in the said Congress, because those plans were discussed and approved by medical men of acknowledged ability;

That the Sanitary Convention of Rio Janeiro, of 1887, and the draft of the Congress of Lima, of 1889, agree in their essential provisions to such an extent that it may be said they constitute one set of rules and regulations;

That if these were duly observed in all America, they would prevent, under any circumstances, the conflict which usually arises between the obligation to care for the public health, and the principle of freedom of communication between countries;

That the nations of Central and North America were not represented either in the Sanitary Convention of Rio Janeiro or the Congress of Lima; but that they might easily accept and apply to their respective ports on both oceans the sanitary regulations before cited;

Recommends to the nations represented in this Conference the adoption of the provisions of the International Sanitary Convention of Rio Janeiro, 1887, or the draft of the Sanitary Convention of the Congress of Lima, of 1889.

It appears on careful examination that the plan of an International Sanitary Convention which was formulated by the American Sanitary Congress of Lima, in 1888, followed very closely the articles laid down in the International Sanitary Conference of Rome, in 1885. It, however, laid down a more detailed plan of quarantine, and it must be admitted that the plan of quarantine there named is admirable in many respects. It does not differ from the plans of quarantine at present adopted. It obliges each country to establish a maritime sanitary service, and provides for international recognition of their certificate. This is an undoubted advance on the existing state of affairs, and confidence in the certificates of unknown sanitary authorities is a plant of slow growth, yet it is believed that some international confidence will in time be established. Certainly the policy of non-intercourse between countries desiring to trade with one another is a relic of mediaeval barbarism. Sanitary science has nowhere made greater advances than in its appliances for complete and safe disinfection.

INOCULATION AS A PREVENTION OF YELLOW FEVER.

The exhaustive researches of Surgeon Sternberg, of the Army, into the question of the etiology of yellow fever, and especially upon the prevention of yellow fever by inoculation, have been published in the last Report of the Marine-Hospital Service, and are sufficiently detailed to enable any one to draw their own conclusion as to the value of the inoculation. For myself, I may say that, notwithstanding all that has been said in favor of the methods of inoculation as a preventive of yellow fever, we must admit that since the time of the alleged discovery of Freire, Rio de Janeiro has been visited by a most disastrous epidemic of yellow fever, the mortality of which was fully as severe as that of previous epidemics; in fact, to-day, the only country from which the United States is seriously threatened by the sending out of yellow fever fomites is Brazil, and the place, the city of Rio de Janeiro.

I suggest that this Section take the papers of Sternberg and the more recent statistics of Freire, both of which I take pleasure in laying before you, and examine carefully those statistics, for the purpose of ascertaining whether they are, or not, such as carry weight to the mind of an unprejudiced person. I am the more ready to do this because of the claim made by a very distinguished gentleman, a member of the American Medical Association, one for whom I entertain the highest respect, that notwithstanding the researches of Dr. Sternberg, the statistics of Freire, as now published, have refuted every opinion adverse to his method. I submit, then, in view of this discrepancy, whether this Section does not owe it to itself, and to the Association, to appoint a Committee of Investigation of the papers as presented, with a view of presenting an opinion that may settle this controversy, so far as the opinion of the Association is concerned.

THE WORK OF THE SECTION.

I now present to you the Programme of the daily work of the Section, so far as completed,

and trust that it may be adhered to so far as possible, with a view to economy of time, and in accordance with the custom of the Association, which directs that such improvements in Section work shall be suggested, from time to time, by the Chairmen, as may occur to them. I have to say that the Secretary has prepared a register of the names of those in attendance, and a record book wherein to transcribe the minutes of the Section. It has been found impracticable to keep in memory alone a record of the proceedings of former meetings, reports of committees and various standing committees that are appointed from time to time. I have therefore thought that a record book, which can be transmitted from Secretary to Secretary at each annual meeting, will be not only a business way of conducting the affairs of the Section, but in itself, in the lapse of time, will constitute a valuable history of its meetings. I take pleasure in presenting to the Section its first record book, which I have entitled Volume I.

Trusting that the meeting may be as harmonious as it now promises, that it may be profitable to all of us, and asking your indulgence in advance for the short-comings of your presiding officer, I thank you for your attention to this somewhat desultory address.

ADDRESS OF THE CHAIRMAN OF THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

Delivered at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY WILLIAM WARREN POTTER, M.D.,
OF BUFFALO, N. Y.

Gentlemen:—It is a just ground for hearty congratulation that your lot has been cast in such a pleasant place, in which to hold your deliberations during this forty-first annual session of our noble Association, as is this beautiful city of Nashville—the Athens of the South, as it has been not inappropriately named—and I consider it a piece of rare good fortune that has fallen to me personally to have been chosen to preside over this body of scientific workers on this occasion. It would be a discourtesy not to express my appreciation of the honor you have done me, and a dereliction of duty not to thank you with warm words for so distinguished a mark of your favor. I crave your indulgence toward my shortcomings—no doubt they will be many—and appeal to you for support in the discharge of my duties now about to begin.

The letter of the By-laws of the Association requires that "the chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvements in methods of work, and present the same to the Section over which he presides on the first day of the annual meeting." It will be my aim to comply with the spirit as well of this mandate; and, reversing the order named in the By-laws, let me first and briefly make those

SUGGESTIONS IN REGARD TO IMPROVEMENTS IN METHODS OF WORK

that have occurred to me as requisite, during an experience of a year's observation of the affairs of the Section.

One of the unprotected points in our organization is the failure of provision for the death or disability of the chairman—contingencies as likely to happen here as elsewhere—and in either case it seems to me the Section might suffer sadly for the want of a presiding officer. In such an event no doubt an acting chairman could be appointed by the President, but it might impair the usefulness of the Section for a year; and who can recall a year lost or wasted? The remedy against such misfortune, a simple one, lies in the election of a vice-chairman at the same time the other officers are chosen. This may, and no doubt will, require an amendment to the By-laws; but such action is easily obtained, for I have no doubt the reasonable nature of such a request would be recognized by the Association. Meanwhile, a vice-chairman can be elected at this meeting, subject to the passage of the proposed amendment.

Let me next call attention to the necessity of a register of the members of the Section, to include the names and addresses of those who manifest an interest in its meetings by regular attendance thereupon. Such a record is an almost indispensable necessity for the officers in conducting their correspondence in preparing for each annual meeting. It may become a convenience, also, in case a roll-call shall be ordered for any purpose, or should the ayes and nays be demanded on any question. Acting upon this hint I have provided such a book, in which a few names are entered as a beginning. The members in attendance at this meeting are requested to add theirs to the list, which is alphabetically arranged for convenience.

It would appear to me a very excellent plan to secure the services of the Secretary for a longer period than one year. This term barely affords opportunity to become acquainted with the duties of the office and with the members of the Section. His usefulness would be greatly enhanced by continuing him in service for several terms.

Finally, and as a matter of supreme importance, the question of reporting the proceedings in full and publishing them promptly after the adjournment of the meeting, is indissolubly connected with the prosperity of the Section. In these days of rapid transit and quick intercourse between even remote parts of our country, time saving methods become a necessity, and time economics a study. They are as important to pro-

fessional men as to anybody, and to none more than to the physician.

The brilliant thoughts that scintillate from the brain molecules during society debates, finding expression often in choice and vigorous English, are lost to literature unless caught up at once by the stenographer's art and preserved by the printer's skill. It cannot be expected that a speaker will be willing to retire from an interesting discussion to write out his own remarks, even to gratify that most amiable of men, the editor of a medical journal; he will not often do it even to ensure a correct report in a Transactions' volume bound in Russia and gotten up in the most attractive style of the printer's art. Moreover, in an Association like this, where there are many Sections and members naturally desire to attend the debates in several on the same afternoon, it would be a source of great satisfaction to have the printed proceedings to read carefully at home, amid the quiet surroundings of the silent hour, provided they could be furnished verbatim and with reasonable promptitude.

To the scientific worker, one of the great attractions of the special societies is the fact that he knows he will get the fruits of his labor preserved for reference and study in conjunction with those of his fellows, where he can carefully and critically review them to his own pleasure and profit. These special societies have on this account, *inter alia*, thriven even at the expense of interest in the American Medical Association. Many of our best men have said they would not come here and engage in hard and earnest work, if it is permitted to be lost to the medical world through indifference, apathy, or neglect of a carefully prepared report of the proceedings. I have felt constrained to allude to this subject because of its great importance to the Association. This is, so to speak, the period of the renaissance of the American Medical Association. The profession of the United States enjoy its meetings and will attend them, notwithstanding the strong ties of the special societies, provided the discussions are preserved with due regard to completeness.

The plan I suggest is, for this Section to employ a competent stenographer to report the discussions with perfect exactitude, and to publish its proceedings in pamphlet form as promptly as possible after adjournment. This pamphlet should contain abstracts of all papers read in the Section, made by the authors themselves, together with a full report of the discussions thereon. The expense of this must of course be borne by the Section, and an annual voluntary subscription of five dollars from each will be necessary to meet it. An editor should be appointed to supervise the publication of the proceedings.

This plan will in no wise conflict with the interests of The Journal. The complete papers will be published in it, together with such longhand abstracts as may be prepared under the directions of The Journal editor. An opinion has obtained among the editors of journals that a longhand abstract of a discussion is better for their use than a stenographer's report. This may be true; no doubt it is; but it does not answer the requirements of the members of a Section like this, who have no time to write out their discussions after they have been delivered, while at the same time they demand that the full proceedings shall appear in print.

These, then, are the suggestions of improvements in methods of Section work that it seems pertinent to offer at this time:

1. That the Section shall elect annually a vice-chairman, whose duties shall be to preside in the absence of the chairman, and to render such other assistance in the conduct of the Section work as may be properly imposed upon him.

2. That a register of the members of the Section shall be kept at each meeting by the officers, to be transferred to their successors at its close.

3. That the Secretary shall be chosen with a due regard to reasonable permanency.

4. That the proceedings of the Section shall be published in pamphlet form each year, the discussions to be reported by a stenographer. To meet this expense an annual subscription is solicited.

RECENT ADVANCEMENTS IN OBSTETRICS AND GYNECOLOGY.

It has not been difficult to comply with the requirements of the By-laws thus far; but now a more trying task confronts me. To report upon the recent advancements in the branches treated of in this Section has, of late years, been deemed a somewhat superfluous labor, in view of the easy interchange of knowledge through the enormous book and journal literature that is put forth annually. A more brilliant field would seem to offer in discoursing upon some special theme in one or the other of its subdivisions. Nevertheless, so long as the law is in full force, it cannot be evaded without doing violence to a principle that underlies all organizations of this kind. Bear with me, then, while I briefly mention two or three points of special interest in both obstetrics and gynecology, that have a practical bearing on methods of practice.

ASEPTIC MIDWIFERY.

The practice of surgery was not more completely revolutionized by the teachings of Lister, than was that of obstetrics through the application of similar principles to the conduct of labor and the care of the puerperal woman. Great as has been the gain in the saving of human life through aseptic surgery, the credit side of the balance-sheet of aseptic midwifery, which cannot be expressed in mere figures, is of infinitely greater importance in the life-saving problems that pre-

ventive medicine, in a self-imposed task, has sought to solve.

The doctrine of modern antisepsis as employed in obstetrics has a three-fold application: first, in relation to the conduct of labor; second, as affecting the child; and third, in the post-partum care of the puerperal woman.

The first lesson that aseptic midwifery teaches is that the parturient woman, whether of high or low degree, must be made absolutely clean in her person and surroundings. Her room must be clean, her bed must be clean, and everything used in the confinement room must be free from taint or odor. She may not be conditioned to have luxuries, perhaps hardly the necessities of the lying-in chamber, but she can and must have cleanliness.

Before the confinement—even immediately before—the woman should have an immersion bath when practicable; if not, then a thorough washing with soap and water. The abdomen, external genitals, nates, hips, and thighs must receive special attention in this cleansing process, and these parts must, at the finish, be thoroughly rubbed off with a weak sublimate solution. Just as the labor begins the vagina should receive a copious lavement of warm water, to terminate in a douche of at least a quart of sublimate water, 1 to 5,000.

If the law of aseptic midwifery is imperative in enforcing cleanliness for the woman, it is even inexorable in its mandates as regards the accoucheur. He must be as clean as soap and water can make him, supplemented with nail-brush and sublimate solution for his finger-nails, hands and arms. He must repeat the brushing of his fingers with the sublimate water before each examination, and the vagina must be invaded as infrequently as may be. The obstetric vicinage must, after delivery, be washed in warm sublimate water, and an antiseptic napkin applied to the vulva.

The child should receive immediate attention after its birth, particularly in the bathing of its face and eyes, a soft cloth dipped in weak sublimate water to complete the toilette of the eyes. Ophthalmia neonatorum, benign or specific, has become unknown where this plan has been strictly and neatly carried out.

During the puerperium following normal labor the propriety of washing out the vagina daily has been questioned by some obstetricians, and I will not presume to pass upon this point dogmatically; but, for myself, I may be permitted to say that if, at the end of forty-eight hours, the lochia is malodorous, it is safe practice to permit the vagina to be gently and thoroughly washed out with warm, weakly carbolated water, many or few times daily, according to necessity.

If, however, the labor has been instrumental, or if the hand has invaded the uterus for any cause, then the uterine cavity should certainly be cleansed with hot water, which may also be weakly carbolated or otherwise disinfected at the end of the lavement. Moreover, the vagina should subsequently be frequently washed out in an appropriate manner, for a number of days. While the abdominal surgeon has little if any use for chemical solutions, the obstetrician cannot dispense with them at present.

These are a few simple rules pertaining to the subject of aseptic midwifery, and they must be scrupulously and delicately adhered to by every physician who practices the obstetric art. Failing to do this is to shoulder an awful responsibility, and the consequences of such neglect would be indefensible either in a court of morals or law.

One of the largest Maternities of the land presents a record of nearly 600 deliveries without a death, and it is safe to say that such a splendid showing would be impossible, except for the rigid discipline that is there enforced by a master who knows no law not based upon that simple and divine word—cleanliness, and in whose wards dirt and noisome stenches are ever and forever strangers.

This theme would permit of much elaboration were the time and occasion propitious, but enough has been said to accomplish the purpose in view, viz.: to call attention to a well-known though oft neglected subject, whose principles are not, I fear me, as rigidly carried out in private practice as they should be.

THE TRACTION FORCEPS.

A few years ago, when Professor Tarnier first introduced the forceps that bears his name to the medical world, the impression conveyed to the majority of obstetricians was not a favorable one. It is true that here and there among men of acknowledged skill the instrument was recognized as one of merit, and it was by a few such put into practical use; but the more general verdict was one of disapproval. The argument was that the instrument was cumbrous if not clumsy; that it could be skilfully applied and made to do efficient work only by an expert who had been specially trained in its complicated techniqne; and, finally, that it was more than all a dangerous instrument, not needed to facilitate delivery—an altogether superfluous addition to an already overstocked armamentarium. Now, after a decade has passed and the instrument has undergone some modification, though still retaining its essential principles, this verdict is about to be, or I might say has been, reversed in all its counts and specifications.

Obstetricians of the most extended experience, notably teachers and those having service in large Maternities, are almost unanimous in their praises of the instrument, especially for the high forceps operation. It enables the operator to seize the head when high up and only partially engaged at

the brim, or in contracted pelves, and to accomplish delivery through traction made in the direction of the axis of the brim, where this were impossible with the classic forceps. The duration of labor is thus materially shortened, with a resultant great saving of both mothers and children. But there is another class of cases in which this instrument is made serviceable, though where it is less frequently employed. I refer to cases of impaction of the head in the pelvic basin with uterine inertia as a concomitant. Here its good offices are made apparent in a minimum expenditure of applied force, and a corresponding economic conserving of strength to both mother and operator.

But all this will be more adequately set forth in a paper by my associate in the administration of the affairs of the Section, whose nimbler wit and greater erudition will, I am sure, entertain and instruct you far beyond my feeble capacity in either direction. I therefore forego further remarks upon this ingenious and useful instrument and its special field of application.

ADVANCEMENTS IN GYNECOLOGY.

It would be interesting to treat upon the rise and fall of craniotomy, the advance of the Cæsarean section, the amputation of the pregnant womb, and many other important questions that are among recent modifications of the practice of operative obstetrics, but the flight of time warns me that I must hasten on to the consideration of a few points in the second department of our Section.

The recent advancements in the gynecological field have been many and substantial. This is true whether in new methods adopted that give promise of great gain, or of former procedures overthrown that have not stood the test of experience.

The cancerous uterus, that has been for so long a period considered the *bête noir* of surgical art, seems about to be reclaimed to the realm of curability through a legitimate surgical procedure. In vaginal hysterectomy there appears to be an avenue of relief from the ravages of this hitherto hopeless disease, provided, of course, the operation is made in suitable cases—those in which the uterine organ only is involved; for it is acknowledged to be hopeless to proceed if there is circumjacent infiltration. The published reports are such as to carry the conviction that this operation has become established on a basis of legitimacy, for it has been able to show results that no other method can thus far claim. It may not yet be all that is desired, but with the improved technique and the multiplied experience of operators in almost every city in the land, there is promise of enough annual cures to win a constantly increasing favor for the method, and to neutralize if not silence adverse criticism.

Without wishing to anticipate the opinions that will be advanced in the papers to be read here to-day on the subject, it will, nevertheless, appear not improper to say that the sum of the whole case viewed from its various standpoints may be fairly stated thus: that whatever the future may bring forth, the operation of the present for cancer of the uterus, whether it be carcinoma of the body or neck, or epithelioma of the cervix, is vaginal total extirpation of the organ.

ELECTRICITY IN THE DISEASES OF WOMEN.

The treatment of the diseases of women by electricity has attracted considerable attention of late, and is manifestly a subject that would appear to justify remark at this time. Georges Apostoli, of Paris, has probably done more than any other man to popularize the agent in this particular field, and it is not uncommon to hear of pilgrimages to his clinic for the purpose of observing his methods, if not for a study of his art. Apostoli's published results are such as to challenge a careful analysis of his cases and a thorough investigation of his methods; but this is neither the time nor place for such extended comment as these would involve.

Paraphrasing a Grant Allenism, it may be asserted that electricity, like evolution, "is now in the air." Everybody talks about it, believes he knows all about it, and discusses it as glibly in his everyday conversation as he discusses the points of race-horses he has never seen, or the superiority of his favorite baseball club, whose members he does not know and whose skill he has never witnessed.

A number of prominent names in Europe and America are constantly quoted by enthusiasts as followers or supporters of Apostoli and his electro-therapeutics, or as authority for the application of electricity to almost every disease that may invade the sexual tract of woman. On the other hand, a large number of equally prominent names may be cited of those who have tried electricity in various forms and under multifarious conditions for like diseases, and as having either abandoned the remedy as worthless or limited its use from disappointment in its results. If judged by this standard one would say with much reason, that the weight of reliable opinion was against such wholesale and indiscriminate use of this agent in this field as its enthusiasts would demand for it.

Laying aside the many minor uses of electricity advocated in society papers, and by magazine writers who in numerous instances have apparently boldly hastened to make known through the medium of the medical press their wonderful feats with an agent they could neither define nor describe, let us examine for a moment its status in the two particular diseases in which its great-

est triumphs are claimed. I refer, of course, to uterine myomata and ectopic pregnancy.

In the treatment of fibroids it is alleged that under a current varying from 15 to 280 milliampères the growth is arrested, the hæmorrhage stopped, the pain abated, and the tumor finally made to disappear by absorption. Certainly nothing can be more satisfactory than such results, no matter by what method of treatment obtained. But when we hear of a patient so cured (?) falling into the hands of another practitioner who finds the tumor still menacing her health and comfort, not to say life, and that he cures his patient by hysterectomy, it makes us pause; and a skepticism necessarily arises as to the value of the agent, or the correctness of the observations of the electrotherapeutist.

In extra-uterine pregnancy electricity has been employed to destroy the life of the embryo, in the expectation that it would mummify and remain henceforth harmless to the woman. The difficulties that lie in the path of acceptance of this practice are so many to the practical surgeon, it is not strange that we should often find him in opposition to its employment. In the reported successful cases has the diagnosis been clear? Is it true that the fœtal remains will not prove a constant menace to the life of the woman? Is there entire freedom from danger in the employment of the current itself? Does not abdominal section with its present improved technique, afford the surest chance of cure, with the minimum of risk? These are some of the questions the well-trained surgical mind would evolve when asked to abandon a logical principle based on the traditions of artistic skill and clinical experience, for one unstable in application, doubtful in action, uncertain in results, and temporary in relief.

While it is probable that electricity will ultimately be adjudged of some usefulness in gynecological practice, its real place is as yet undetermined, and its true value cannot, therefore, be properly estimated at present. Meanwhile, let us watch carefully, wait patiently, test cautiously, speak gently, and above all adhere tenaciously to the mandate of the Apostle: "Prove all things; hold fast that which is good."

ADDRESS OF THE CHAIRMAN OF THE SECTION OF OPHTHALMOLOGY.

Delivered at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY S. C. AYRES, M.D.,
OF CINCINNATI, O.

The Section of Ophthalmology, through its Chairman, welcomes most cordially each and every one of you to-day. Although this is only its second year of independent existence, it does not feel like a child of tender years, but rather like a man of vigor and strength. It points with pride to the programme of last year, and this as substantial evidence of its ability to hold its own with the other and older Sections. The contributions of last year were excellent and of a high order, and your Chairman can emphasize the same in relation to the programme which he has to offer.

There is no question but that there is material enough among those who devote themselves to our specialty to sustain the Section of Ophthalmology with honor and credit. It needs only the coöperation of those interested to make it so attractive that it will yearly call forth the personal observations of its members in a manner that will make its meetings highly interesting and mutually beneficial.

We have met to interchange views on topics of mutual interest, to profit by each other's experience and observations, to enjoy that social intercourse which fosters personal friendship among professional men, and to accept the generous hospitality of our Southern confrères in this the beautiful capital of their State.

It has been charged that the life of a specialist makes him somewhat narrow-minded, as his work in a measure excludes the consideration of other branches. I question the truth of this. It certainly does not prevent him from taking an interest in and enjoying a retrospect of the progress which has been made in the vast field of work now occupied by medicine, surgery and the allied branches. The time was when a physician was expected to know a good deal about everything—in fact he was even expected to know everything; but that day is past.

Owing to new and advanced methods of teaching, our conception of the study of medicine is wholly different now from what it was twenty years ago. The horizon of our knowledge has so widened that we are not content to assume that we can comprehend it all. There is a limit to our ability to study, for time and physical endurance are limited, and we must content ourselves with studying well our own part and comprehending as much as possible of other allied branches. As we look out on a landscape we see clearly and distinctly what is near, but less distinctly what is in the distance. So with our specialty; it is close to our eyes and our heart and we take it all in, but we can still enjoy what surrounds us, although at a greater distance.

We know how much work it takes to keep ourselves up with the advances of the day, and we know full well that other branches are as broad, and as long, and as deep as our own, and we can appreciate the work which our colleagues have to do. From this standpoint—and I hold it is a true one—a specialist should not be narrow-minded: his own work should broaden his views of the fields of work his colleagues are engaged in. The allied

branches have made wonderful progress in the past few years, and we can certainly look at their work with pride and admiration.

We look with wonder on men who now with such confidence open the abdominal cavity and perform operations which not many years ago would have been deemed not only foolhardy, but unjustifiable. In preantiseptic days such operations would have been followed by the most disastrous results; but now—how changed! Statistics prove that these operations are not only justifiable, but positively demanded as diagnostic measures.

We learn of an eminent writer in the East something of the progress of surgery which is simply astounding. In compound fractions of all grades the mortality is only one-half of one per cent., instead of from 25 per cent. to 68 per cent., as it was in years gone by. In ovariotomy Mr. Tait's percentage of loss in his second series of 1,000 cases was only 3.3 per cent., when a loss of 50 per cent. was common twenty-five years ago.

Surgeons now remove a portion of the stomach in case of cancer of that organ; sections of the intestines are also removed successfully; kidneys are cut down, calculi removed, and the gland preserved to perform its function; if it cannot do so, it is removed entire; and so with the gall bladder—it is opened, calculi removed, and in case this cannot be done successfully the gall bladder itself is sacrificed. Even the citadel of the mind itself—the brain—is opened and tumors successfully removed, which had been located by long and patient study of its functions. This chapter of progress is so startling that we stand in awe and admiration, and wonder what will next be done.

Are we holding up our end of the line in this march of progress? How can each one add something to advance the good of the whole? Cases of interest fall to the lot of each and every one. Interesting and valuable observations are being made, but do we give our associates the benefit of them? How can we best do it? My answer is, by giving to the journals a prompt report of such cases. It is not necessary that an elaborate paper should be written, nor that the whole literature of the subject should be analyzed; leave that for some one else who has more time than you. With the systematic reports of the progress of ophthalmology which are given at intervals in this country and Europe, and particularly in Nagel's Jahresbericht, your grain of seed will not be lost, but will be preserved in a permanent form and utilized for the best purposes of the profession.

Take the Transactions of the American Ophthalmological Society as the representative body in this country and see how many short papers there are, and how few long ones. A single case is frequently presented, but it is the nucleus of a discussion which brings out the various opinions of those present. Let us, then, bear this in mind and give the profession the benefit of our observations.

To aid us in this, a systematic arrangement of our cases as they come on, with free notes of the various phases through which they pass will assist us immensely.

Dr. James Anderson, in a very interesting and valuable article published in the *Ophthalmic Review* on "Some Ocular and Nervous Affections in Diabetes and Allied Conditions," says: "I think it the best and most hopeful feature in ophthalmology that it has relations, closer and more remote, with every branch of surgery and medicine."

The intimate relationship between ophthalmology and general medicine and neurology is recognized by all. The more cerebral and spinal diseases are studied, the more is this appreciated. At the present time every neurologist must be familiar with the alterations in the optic nerve, the influence of the paresis or paralysis of the ocular muscles, and the influences of errors of refraction on headaches and various subjective symptoms which are erroneously attributed to other organs.

Dr. J. Hughlings Jackson was last year elected President of the Ophthalmological Society of the United Kingdom. In his introductory address he says that he began his career in an ophthalmic hospital, and he thinks it the luckiest thing in his medical life. He there obtained lessons on exact observation which he could not have obtained in any other branch. He says that twenty-three years ago he wrote as follows: "Until physicians work at the muscular disorders of various convulsive seizures as carefully as ophthalmic surgeons do at paralysis of the ocular muscles, our knowledge of convulsions will not advance in an orderly way." This seems almost prophetic. He has done much to clear up many obscure points in diagnosis of the pathology of cerebral and spinal diseases.

Look at the manner in which convulsive seizures of a muscle or a set of muscles on a limb or of the entire body have been studied. These phenomena have been investigated with reference to the special portion of the brain which was involved, and how grand has been the outcome. Portions of the brain presiding over certain functions are now quite clearly mapped out, and still the work goes on.

Last year we had excellent suggestions on the discussion of ophthalmic subjects, and valuable hints were given. To carry out this most desirable work, how great an aid would a classified register be, where our cases were so arranged that we could at once refer to any particular subject.

When we wish to investigate a point we naturally turn to the statistics which have been published. What a satisfaction it is to find clear and

convincing light thrown on a point which was in dispute. We feel thankful toward those who have been so painstaking as to collate their cases and the results, and so tabulate them that we can make use of them. To whom are we indebted for these statistics? Public institutions, hospitals, infirmaries, etc., are expected to publish these cases; but do physicians, surgeons, oculists, etc., collect their cases and so tabulate them that they could refer to them at any time? I fancy not. Last year at Newport we had a book for the registration of cases presented to us as a sample book of its kind, and it presented many excellent points. It was shown how easily one could refer to any class of diseases and at once record the number treated, results, complications, etc. How many oculists keep such a record, or have kept one for years past?

I think that if cases were classified as they come along one would derive much more pleasure in looking over his case book at the end of the year. He would also be better able to draw conclusions from his experience.

Many interesting cases fade from our memory as new ones crowd on with fresh points of interest. We have indistinct recollections of them, but cannot recall the name, nor the exact date; and so we move on, leaving much behind us that we ought to have preserved in a shape that we could refer to it at any time. A classified register would enable us to refer to our cases at a glance and collate and utilize them. We would in this way preserve the valuable ones and be able to sift the ordinary and uninteresting ones from those we wished to preserve.

A review of the progress of ophthalmology will compare favorably with that of any other branch of medicine. The new, or rather old, operation of simple extraction is gaining in favor. Statistics are not yet extensive enough to prove its true value, but it seems to me that it is bound to supersede the modified linear extraction of Graefe, and show much superior results. Men educated in the Graefe school are loath to give up a favorite procedure, but such statistics as Knapp has furnished will prove an unanswerable argument to any objections.

The eye as associated with, or involving renal, cerebral, and spinal diseases, and all reflex symptoms of internal organs, has been studied with renewed care. The intimate relationship between these diseases and the eye, is so generally acknowledged that this point no longer needs an argument. We are fortunately able to act as guides to show our confrères through places which otherwise would be dark without the aid of the skilled ophthalmologist.

The study of the errors of refraction is receiving, I may say, universal attention. Its importance grows as it is better appreciated by the profession as well as by parents and teachers. The relief afforded by the careful and accurate adjustment of lenses is incalculable, and as accurate methods are adopted, the results of refraction work are bound to be more and more satisfactory.

This is becoming the most important as well as the most interesting branch of our specialty. In connection with this the question of strabismus comes up, and it is, indeed, most satisfactory to know that it is now receiving intelligent and rational treatment. The results of correcting the underlying error of refraction are most satisfactory, and the necessity for making advancement operations to correct divergence after tenotomy of the internus will seldom ever occur.

Antiseptic precautions, before and after operations on the eye, are now universally adopted, and the results are very gratifying. They will grow in importance as ophthalmic surgery advances. The ophthalmic journals, foreign and domestic, and the proceedings of the ophthalmological societies abound in rich results of the researches and experience of the most eminent men in our specialty. The pens of such men abroad as Alfred Graefe, Hugo Magnus, Van Hippel, Deutschman, Landolt, DeWecker, Leber, Schweiger, Hirschberg, Hutchinson, Nettleship, and a host of others abroad, as well as Knapp, Gruening, Noyes, Kipp, Williams, Bull, Wadsworth, Theobald, Stevens, Roosa, Risley, Harlan, Alt, Chisolm, and many others in our own country, are active in giving to the profession the results of their labors. We have thus each year a mass of rich experience presented which is of inestimable value.

Death has claimed two eminent men during the past year, Jacobson, and Donders. The latter by his genius and profound study worked up the subject of errors of refraction from a theoretical and mathematical standpoint to a practical standpoint, and has left a monument to his name which will be more enduring than a shaft of marble or granite.

This year has been productive of two new and valuable text-books, one by Dr. Geo. A. Berry, of Edinburgh, and the other by Dr. Henry D. Noyes, of New York. Since the book written by Wells, of London, several years ago, we have not had any general text-book written in the English language, but have depended principally upon the translations of the works of our German and French confrères. While these are very good, yet, we welcome with pleasure these two books written in the English language. They are certainly in advance in all respects of any works hitherto published, and are monuments of earnest, faithful work, which reflect great credit on their respective authors.

In order to give a practical turn to my paper, I will say a few words in relation to the topical use of bichloride of mercury in the treatment of

ocular diseases. For the past year I have used it a great deal. It is not a new remedy, but a very old one. If you will consult the oldest book you have on diseases of the eye, you will see that its use is recommended there. It gave place to other and newer remedies, but now in the light of antiseptic investigation we go back to our old friend, and find it one of the most reliable agents we can command. It is a powerful remedy, and must be used with care and discrimination. And right here comes the point of greatest importance: It has generally been used in two strong solutions, and the end to be accomplished has been defeated by this fact. In weaker solutions it acts kindly, surely, and with very slight tendency to excite relapse.

In granular lids I have used it in a good many severe cases, and I have tested it by carefully excluding other well known remedies, and have been much pleased with its effects. In severe cases I used it 1-500, brushing it on the lids, and then washing it off. I found this too strong for regular treatment, the eyes not tolerating it well; I fell into the habit of using it 1-2,000, and found that this did better and only exceptionally caused any unfavorable effect. Occasionally I would use the stronger solution mentioned, but relied on the weaker one. It is not painful, and patients recover from it more quickly than from the use of the crystal of copper or from the ordinary solutions of silver nitrate.

In severe acute catarrhal conjunctivitis its effects were excellent. It was generally ordered in solutions of 1-3,000 or 1-4,000, and used three times a day, and clothes moistened with it were placed over the closed eye-lids. In phlyctenular conjunctivitis and keratitis it seemed to meet every demand required and gave excellent results. Under its influence the phlycten would disappear rapidly, and it seemed to me it prevented the development of new ones.

I have injected it frequently in blenorrhœa of the tear sac and with the most satisfactory results. In purulent ophthalmia it is questionable whether it is more valuable than our old stand-by silver nitrate. There is an objection to it which we must bear in mind, especially where we order it in large quantities, that it is poisonous, and if taken internally might produce dangerous and even fatal symptoms. But the same thing can be said of atropine. The patient should be warned of the danger, and the bottle properly marked. It is a remedy which is bound to meet with increased favor, as is more extensively used in solutions which are suited to the conditions of the eye. The use of the sublimate solution is right in the line of antiseptic treatment, and is worthy of a thorough and unbiased investigation. I hope that its use will receive that intelligent and discriminating consideration which it deserves.

Allow me gentlemen, in conclusion, to express my unqualified confidence in the future success of our Section, and to thank you for your generous and valuable contributions, and to express my high appreciation of the honor you have conferred on me as its chairman.

ADDRESS TO THE SECTION OF DENTAL AND ORAL SURGERY.

Delivered at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May 20, 1890.

BY JACOB L. WILLIAMS, M.D.,
OF BOSTON, MASS.
CHAIRMAN OF THE SECTION.

On a brief review of recent advancements in matters pertaining to this Section, we may surely say that there has been very substantial progress during the past year.

Mention should be made of laborious and successful researches on the origin and correction of oral deformities, which have added much to our supply of positive knowledge.

The study of antiseptics has been zealously pursued, further demonstrating their properties, not only as antiseptic in various degrees, but also their qualities as irritant or non-irritant, and as coagulating or non-coagulating.

Attention has been given, and knowledge has been gained in regard to the effects of naso-pharyngeal growths on the form of the mouth, and the perversion of its functions, often to the injury of general health.

The study of special histology has given us positive evidence of some things previously suspected to exist, and pending researches promise new discoveries.

The science of chemistry has continued to lend its aid. And the esthetics of practice have had increased attention given to them. In regard to professional ethics, it may be said that there is still room for further advancement.

But of greatest and most fundamental importance, I think, we may regard the increasing devotion to the consideration and study of the laws of health and disease, on which must be based all intelligent practice in any branch of the healing art.

In a field devoted to agriculture there may be various departments, some for grains, some for fruits, some for flowers; but all must be governed by the laws of vegetable growth and thrift. A disregard of those laws, though accompanied by the most elaborate or ingenious agricultural implements, used by most skilful hands, will surely not result in the largest degree of success. So with the healing art; whoever is best prepared with knowledge of the laws of life, health, and disease, and their relations to professional practice, will find his trained skill the most successful.

It is to be hoped that, in the colleges and schools, increased time and attention will be given to the study of these fundamental principles.

It should not be forgotten that the healing art, though in some of its branches bringing mechanical skill and chemical knowledge to its aid, is itself the beneficent purpose or substance of practice; the design of surgery not being for mechanical display, nor of medicine for chemical demonstrations.

Hippocrates said, "In no one thing does mortal man more resemble the immortal gods, than in giving health to man." And so far as mechanics and chemistry are made therapeutic and prophylactic aids in securing health to mankind, in so far do they become ennobled beyond their ordinary application to "inanimate things."

In earlier years there were only a few qualified practitioners who devoted their knowledge and skill to the treatment of the whole oral cavity, while the larger number gave their attention simply to the teeth; and so the specialty was called "dentistry."

But at this day, when knowledge of the principles of medicine and surgery is more general, and more commonly made available in the treatment of the whole oral cavity, and with reference to its influence on the health of the system, the old term seems too limited. And what now would be a more proper and comprehensive name for the specialty so practiced, than the word *Oristry*?

It is gratifying to know of an increasing general sentiment or principle, pervading this as well as general practice, which perhaps cannot be better expressed than in the line of our poet Holmes, when he wrote, as the motto of our profession, "Our duty is to save."[1]

Every practitioner knows that he is bound in honor to *do his best* for the patient; and the laws of the land hold him to that duty.

If a case for special practice comes to him, and a competent specialist is available, he naturally feels that he is doing his best by referring the patient to the specialist. But if such special treatment is unattainable, he is bound in honor and by the common law to do all he can to save life or limb or member of the patient.

In the variety of legislation in different States, two, at least, recognize this obligation in their statutes. But what shall we say of some State enactments that contravene the great purpose of all humane and proper practice? and assume to prohibit a physician from doing anything in a specialty except to *destroy* a member or organ of the human body; for doing which, also, he, as well as a specialist, may become legally liable for damages.

Special statutes cannot properly prohibit a physician or surgeon from *doing his best* for the benefit of a patient, whatever may be the ailment.

[1] "The Two Armies," by Dr. O. W. Holmes.

We have the satisfaction of knowing that this Section will be ably represented at the International Congress at Berlin by several of its members of well-known erudition.

Mt. Vernon St., Boston, Mass.

MEDICAL PROGRESS.

THE CAUSES OF FAILURE IN THE TREATMENT OF UTERINE FIBROMATA BY APOSTOLI'S METHOD.—DR. APOSTOLI in a recent communication to the *Gazette de Gynécologie*, takes occasion to explain some of the causes of failure in his method of treating uterine fibroids. He emphasized the statement which he has often made, that his method never aims at a radical cure of all cases, which he says is rather the exception than the rule, but it does aim at the symptomatic cure of the patients, with concomitant, though often limited reduction in the size of the tumors. The causes of failures, he says, may be summarized under three heads: causes depending upon the operator, upon the patient, and upon the treatment. As regards the operator, he finds that failure depends largely upon inexperience in gynecology, lack of operative dexterity, and complete ignorance of physical laws. The capital error consists in mistaking a cyst of the ovary or a tumor of the Fallopian tube for a fibroma, and applying a mode of treatment which is contra-indicated.

Regarding the application of the treatment he finds the following sources of error: A current too feeble, a current too intense, too frequent repetition of the séances, or too long a continuation of the same, absence of antiseptic precautions, insufficient localization of the current, especially in fungous and hæmorrhagic endometritis associated with fibromata, failure to make galvano-punctures, and finally a too early abandonment of the treatment.

As regards the patient herself the causes of failure are not less important. It is important to consider the character, seat and topography of the tumor. In general, it may be said, that other things being equal the effects produced will be greater when the tumor is more completely interstitial and *vice versa*. Soft fibromata are much more amenable to treatment than the hard ones, although whatever the variety may be, electrical treatment sufficiently long continued will produce positive anatomical and symptomatical results. Another cause of failure in the treatment of fibromata regards the failure to recognize lesions of the appendages of various sorts, which under some circumstances may be a cause of permanent congestion and uterine hæmorrhage, and under others a cause of peritoneal inflammation. These are the cases of pyo-

salpingitis or suppurating tumors of the Fallopian tube which partly escape the action of the continuous current applied to the uterus, but which are amenable in many instances to galvano-puncture applied with a view to making an artificial opening with vaginal drainage. In these cases we now have an explanation only lately recognized, of the cases of sudden death following a simple examination, the introduction of a speculum or some trivial gynecological manœuvre. In these cases there is rupture of a suppurating cyst of the appendages with discharge of pus into the peritoneum, producing a violent peritonitis.

Every collection of pus in the pelvic basin contra-indicates intra-uterine galvano-cautery of great strength; the first indication and the most urgent one, is to evacuate the pus; vaginal galvano-puncture in the cul-de-sac serves the double purpose of draining the pocket through an artificial opening, and aiding resolution by the trophic action of the current. In cases of doubt where exploration is insufficient or incomplete what means do we possess of confirming our diagnosis and justifying our intervention? The surest and most valuable is the thermometer. If after a single intra-uterine application of the method in a case believed to be simple, fever or pain is manifested and does not readily yield to treatment, if the temperature remains high (39° or 39.5°), it is necessary to exercise caution, and in all cases a temporary or complete abandonment of intra-uterine treatment becomes necessary. Another examination under chloroform is required, when at the side of the fibroma a tumor of the tube heretofore unrecognized will often be found. Under these circumstances two alterations present: the tumor may be near the vagina and consequently accessible to galvano-puncture and evacuation—which should be secured at once—or it may be too high up for vaginal treatment, when laparotomy becomes necessary. Finally there is a source of failure, the responsibility of which falls upon the patient *id est*, the neglect to observe absolute repose for from one to several hours after every intra-uterine treatment. The infringement of the regulation may provoke serious consequences, such as peri-uterine phlegmon; the physician cannot be too insistent upon this point, especially in cases where there is no painful reaction from the treatment.

Chloride of Zinc for Endometritis.—Polaillon reports on the results of his experience in the use of chloride of zinc in the treatment of endometritis. The remedy is employed in the form of bacilli composed of equal parts of flour and zinc chloride; these vary in size according to the capacity of the uterine canal, but are generally from 2 to 5 millimetres in thickness. The bacillus is held in place by a vaginal tampon. An eschar is produced in a few hours, generally without much pain, and always without febrile reaction. The tampon is removed on the second day, and an antiseptic douche is given. On the third and fourth days the remains of the bacillus and the necrosed tissues are removed, after which the patient is kept quiet for a few days. A single application of the bacillus generally suffices to produce a cure. By the fifteenth or sixteenth day after the application the uterus regains its normal condition; if after this time the secretions continue to appear a second cauterization is practiced. The author finds abundant reason to be satisfied with this plan of treatment, and lays stress upon the various advantages obtained, thus no chloroform and no preliminary treatment is required; there is no danger involved in the treatment and a cure is obtained in most cases.

Poisoning from Sublimate Douches.—M. Créquy reports a case of abortion with retention of the placenta (the os uteri being closed) in which he used vaginal douches of sublimate 1–2,000) three times a day for two days. The placenta was then discharged and a single intra-uterine douche was given with a double canula. Vaginal douches were then resumed as before, and at the end of two days the patient was seized with colic diarrhœa, vomiting and an intense stomatitis, causing sloughing of the cheeks. For several days the symptoms were grave, particularly that of anuria, which lasted three days, the patient finally making a good recovery. The writer adds that he has observed that sublimate disappears almost instantly from solutions when poured into metallic vessels, or when transferred by means of spoons, etc., from one vessel to another. It is, therefore, necessary to avoid the use of metallic irrigators, which retain the greater portion of the salt, allowing the water to escape almost pure, which, indeed, may possibly be one reason for the rarity of poisoning from sublimate solutions.—*La Sem. Méd.*

Diphtheria and Typhoid Fever.—At a recent meeting of the Berlin Medical Society Prof. Virchow exhibited curves representing the mortality in Berlin from diphtheria and typhoid fever for the years 1883–1888. These curves showed that diphtheria has been much less prevalent of late years, although the mortality has not greatly varied. The greatest frequency of the disease was between the months of October and January. The curves also showed that the epidemic of typhoid fever which occurred in 1888 was especially active in those quarters of the city which are unprovided with water pipes, which goes to prove that the bacillus of Eberth may be transported by the atmosphere.—*La Sem. Méd.*

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SATURDAY, MAY 31, 1890.

THE FORTY-FIRST ANNUAL MEETING.

The suburbs of Nashville are proverbial for their beauty, and the city itself throbs with the impulses of a vigorous life. The sanitary conditions are so perfected that it hardly has a rival in the matter of health. It is claimed, indeed, that mortuary statistics are of little value here for the reason that they are so meagre. We are in Nashville at the hour of its most beautiful adornment. Foliage and flowers of exquisite beauty meet us at every hand. The proverbial hospitality of its people has never been overstated, and it seems never to wane.

There is a large attendance at the annual meeting. Many Sections not hitherto specially interested are largely represented. This is well! for once that interest awakened, permanent relationship with the Association is very sure to follow. It is to be hoped that the physicians not only of Tennessee but of the adjacent States are to be more fully identified with this National organization. We are confident that it will receive an added impulse and a renewal of its vigor from the accessions which are being made at Nashville.

The first morning session was held at the Vendome. Every seat on the main floor was occupied and large numbers of ladies and gentlemen were in the galleries. The event of the morning was the President's Address by PROF. E. M. MOORE, M.D., of Rochester, N. Y. It is but simple justice to say that he was at his best! In his Address, which will be found in last week's JOURNAL, he rapidly sketches the National legislation which has been had in matters of sanitation from the inception to the present hour. He paid a most deserved tribute to the work of State Boards of Health, to the Marine-Hospital Service, and gave with emphasis his conviction that the hour was at hand when a distinct Department of Sanitation should be created. He dwells very fully upon what has been done and what should be done in the matter of food-inspection, and the needs of Governmental surveillance of the contagious diseases which imperil our domestic animals. His Address gives strong commendation of the work already done and as strongly urges a more perfect completion in the future.

EDITORIAL NOTES.

INTERNATIONAL MEDICAL CONGRESS. — *The Provincial Medical Journal* says: "The time for the International Medical Congress is drawing near, and arrangements are now being made with various companies for transfer. We had a very pleasant party to America, and we should be pleased to hear from those who went to America, and others, so as to form a special contingent to Berlin. This Congress promises to be well attended, and probably 5,000 medical men will be present. From what we hear the Congress will be one of great scientific interest, and all the arrangements will be admirably carried out."

DEATH OF DR. W. H. BYFORD.—We regret to have to chronicle the death of Dr. Wm. Heath Byford, of Chicago, the eminent gynecologist, who succumbed to an attack of angina pectoris after an illness of only two hours. Dr. Byford was born in 1817 and was 73 years of age. He began practice in 1838; from 1850 to 1854 he held a professorship in the Evansville Medical College. In 1857 he was elected to the chair of obstetrics at Rush Medical College. From the foundation of the Chicago Medical College in 1859 to 1880 he filled the chair of gynecology in that institution, and from 1880 till his death he held the same chair at Rush. He was the most active mover in the organization of the Woman's Medical College established in 1869, and has ever since been its president and one of its professors. Dr. Byford was a member of all the leading medical associations of the country. He held the vice-presidency for a time of the American Medical Association, and was president of the Ameri-

can Gynecological Society. Besides the two professorships he held, Dr. Byford was the Surgeon-in-Chief at the Woman's Hospital on the south side, and consulting physician at the Hospital for Women and Children on the west side. In addition he was connected more or less closely with other hospitals and dispensaries. He was a frequent and able contributor to the medical press, and for four years was the editor of the *Medical Journal and Examiner*. In the more substantial forms of authorship more than one of his works is used as a text-book in medical colleges.

The National Association of Medical Colleges.—The Conference of Medical College Delegates held at Nashville on the 22d inst., has resulted in the formation of an association with the above title, the object being to secure needed reforms in the system of medical education. The following officers were elected: President, N. S. Davis, M.D., LL.D., Chicago, ex-president of the last International Medical Congress; secretary and treasurer, Perry H. Millard, M.D., St. Paul, dean of the Department of Medicine of the University of Minnesota.

Chicago Policlinic.—The names of Drs. F. C. Hotz and G. Füterer have been added to the Faculty of the Chicago Policlinic.

Medical Society of New Jersey.—The one hundred and twenty-fourth annual meeting of this Society will be held in the Heath House, Schooley's Mountain, on June 10 and 11, commencing at 4 P. M. on Tuesday the 10th. Committee on Organization will meet in the drawing-room at 3 o'clock P.M. Delegates are requested to present their credentials at that time. All members of district societies not in arrears to this society are entitled to seats as corresponding members, and when they report themselves to the Secretary their names shall be entered on the minutes. Members who desire to present voluntary papers or reports of cases should communicate by letter with Dr. H. R. Baldwin, New Brunswick, Chairman of Business Committee.

The Rush Monument.—The report of the Chairman of the Rush Monument Committee to the meeting of the American Medical Association showed that responses to the appeal for aid to build the monument had not been liberal. It was hoped, however, that by personal applications sufficient funds would be raised to lay the corner-stone of the monument at the opening ceremonies of the Columbia Quadri-Centennial in Washington.

Medical Society of the State of Pennsylvania.—Arrangements have been made for exhibits at the meeting of the Pennsylvania State Medical Society. Exhibits will be in Grand Central Rink, a few doors from the Bijou Theatre, where the meetings will be held.

The Section of Medical Jurisprudence of the American Medical Association will hereafter be known as the Section of Neurology and Medical Jurisprudence.

Ohio State Medical Society.—The forty-fifth annual meeting of this Society will be held at Columbus, O., from June 4 to 6, 1890. The sessions will be held in the Auditorium of the Board of Trade Building, East Broad Street, near High Street. First session at 2 P.M., Wednesday, June 4. Reduced rates may be obtained on all railroads on the following conditions: Each person must purchase a first-class ticket to Columbus; he must obtain from the ticket agent a certificate of such purchase, which agents are instructed to furnish on request; he must have this certificate signed by the Secretary at the meeting. On presentation of this certificate to ticket agents in Columbus, they are instructed to sell return tickets at one-third the highest limited fare. Tickets should not be purchased more than three days prior to the meeting. Tickets are good for three days after the meeting, and are not transferable. Return tickets are limited to continuous passage. If through tickets cannot be procured at the starting point, purchase ticket to most convenient point where they can be procured, and buy ticket and get certificate from ticket agent there. No refund of fare will be made on any account whatever because of failure to obtain certificate.

A Policlinic has been opened in Paris.

Prof. Gottstein.—The honorary title of "Professor" has been conferred on Dr. Gottstein, of Breslau, who, though he has for many years been recognized as one of the foremost laryngologists in Germany, has hitherto had no higher rank in the teaching hierarchy than Privat Docent.

AMERICAN MEDICAL ASSOCIATION.

Forty-first Annual Meeting, held at Nashville, Tenn., May 20-24, 1890.

GENERAL SESSION.—FIRST DAY.

The Forty-first Annual Session of the Association was held at Nashville, Tenn., at the Vendome, Church St., Tuesday, May 20, at 11 A.M. The President, Dr. E. M. Moore, of New York; Vice-President Dr. Thos. B. Evans, of Maryland; the Permanent Secretary, Dr. Wm. B. Atkinson, of Pennsylvania; Assistant Secretary, Dr. G. C. Savage, of Tennessee; Librarian, Dr. C. H. A. Kleinschmidt, of District of Columbia; and Treasurer, Dr. R. J. Dunglison, were present.

The meeting was called to order by Dr. W. T. Briggs, Chairman Committee of Arrangements.

Prayer was offered by Rev. Jerry Witherspoon.

Dr. Briggs welcomed the members on behalf of the profession of the State.

His Excellency, R. L. Taylor, Governor of Tennessee, welcomed them on the part of the State, and the Hon. P. C. McCarver, Mayor of Nashville, on the part of the city.

The reading of the list as registered was postponed.

Dr. Briggs announced the programme and invitations.

Letters of regret were read from Dr. W. A. Phillips, of the Judiciary Council, and Dr. R. Battey, of Ga.

Vice-President Evans took the Chair, when the President delivered the *Annual Address* (see page 737). On motion of Dr. Brodie, seconded by Dr. Grissom, of N. C., thanks were tendered the President for his able address, and a copy requested for publication.

On motion of Dr. Schenck, of Mo., that part of the address referring to State Medicine was referred to a committee of five to report how it could be carried into execution.

Dr. Atchison, of Tenn., asked the attention of all to the efforts of the ladies in behalf of the Jackson Tomb and Hermitage.

After the announcement of the meeting of the State delegations to select members of the Nominating Committee, the Association adjourned until Wednesday, at 10 A.M.

SECOND DAY.

The Association was called to order at 10 A.M. by the President.

Prayer was offered by Rev. Dr. Winchester.

A number of invitations were announced by the Chairman of the Committe of Arrangements.

The Permanent Secretary called the roll of States and the following were reported as constituting the Committee on Nominations:

Ala., W. H. Sanders; Ark., J. A. Linthicum; Cal., Winslow Anderson; Col., E. B. Carlin; Conn., W. C. Wile; Dak., S. J. Coyne; D. C., R. Reyburn; Fla., J. P. Wall; Ga., T. S. Hopkins; Ill., J. H. Hollister; Ind., G. J. Cook; Ia., D. D. Crouse; Kan., J. E. Minney; Ky., W. H. Wathen; La., J. J. Bland; Me., A. Garcelon; Md., A. A. Friedenwald; Mass., J. L. Williams; Minn., J. H. Murphy; Mich., H. O. Walker; Miss., D. W. Trimble; Mo., W. P. King; N. J., W. Perry Watson; N. Y., H. D. Didama; N. C., Eugene Grissom; Neb., W. M. Knapp; Ohio, E. H. Hyatt; Penn., W. H. Daly; S. C., G. J. Mackin; Tenn., J. B. Murfree; Texas, B. H. Eves; Utah, F. H. Bascom; Vt., C. L. Allen; Va., J. E. Chancellor; W. Va., C. T. Ulrich; Wash., W. T. Willsey; New Mexico, E. L. Stephens; U. S. Army, J. H. Baxter; U. S. Navy, E. Dean; U. S. Marine-Hospital Service, J. B. Hamilton.

On motion of Dr. W. Anderson, the Committee was given leave of absence in order that it might meet at once.

Invitations for the next session to be held in California, Colorado, and Nebraska, were read and referred to this Committee.

On motion of Dr. Callender, the name of the Section on Medical Jurisprudence was changed to the Section on "Neurology and Medical Jurisprudence," *nemo contradicente*.

Dr. W. B. Atkinson asked that the By-laws be changed to permit of the election for each Section of a Vice-Chairman, in addition to a Chairman and Secretary.

Upon this, Dr. J. M. Keller asked action upon his amendment offered two years ago and laid over, repealing the action by which the officers of the Sections were elected by the Sections.

Dr. Culbertson offered a resolution asking for the appointment of a committee of nine to revise the working plan of the Association, to report at the next annual meeting.

On motion of Dr. N. S. Davis, of Ill., the whole matter was laid on the table till the regular order of business had been attended to.

Dr. N. S. Davis then read the *Address on General Medicine* (see page 746).

On motion of Dr. W. Brodie, Mich., the thanks of the Association were tendered Dr. Davis for his able paper, and a copy requested for publication.

The Permanent Secretary read the report of the Rush Monument Committee, for the Chairman, Dr. A. L. Gihon, who was absent.

REPORT OF THE RUSH MONUMENT COMMITTEE.

The recent publication, in THE JOURNAL of the Association of April 26, of the report presented by your committee at your last annual meeting at Newport, R. I., and of the able Address in Medicine, on the same occasion, by the Provost of the University of Pennsylvania on the life and services of Benjamin Rush, establishing his lofty claims upon the profession "as the high-

spirited patriot, the wise and far-seeing reformer and philanthropist, the eloquent teacher and writer, and, above all, as *the founder of scientific medicine in America*," render it scarcely necessary for them to do more than reiterate what was then said, and to ask from every member of the Association the careful perusal of Dr. Pepper's admirable discourse, confident that they will agree upon but one reply to the question with which he concludes his paper: "Is it not our duty, shall it not be our pride, to rear in enduring form a *fitting memorial* of our gratitude?"

Your Committee confess, to considerable disappointment, that their published appeals have thus far met with so little response. The enthusiastic approval of the projected monument at the meetings of the Association has given them every reason to believe that the modest contributions solicited would be promptly, generously and spontaneously given. It was thought, moreover, that the examples of other professions, like those of Science and the Law; of smaller bodies, such as the little community of deaf-mutes, whose statue of their beloved and honored teacher, Gallaudet, was projected, designed, executed and unveiled, since this to Rush was undertaken; of a foreign people, as the Italians, whose monument to their own patriot-physician, Agostino Bertani, was likewise conceived since ours, and now stands completed in Milan, would determine the physicians of this country to show to all Americans that they too had a great man to whom they were proud to render conspicuous honor. The personal friends and admirers of Ricord, in France, are proposing to commemorate him by a statue, as those of Marion Sims are about to do in the United States, but Ricord, and Sims, and McDowell, and Flint, and Gross, and many more of our brilliant and renowned physicians, are commended to us for other than the reasons which make Benjamin Rush an eminently National figure, and as such an especial claimant upon the regard and veneration of men of every branch of our profession, and from every section of our country. Because in his person is exemplified the part a physician of the profoundest professional attainments can fill with distinction in public affairs at their most critical junctures; because, among the grand, heroic personages of the period of the Revolution, of whom Americans entertain such reverential pride, Dr. Benjamin Rush was the peer of them all in intelligence, patriotism, bravery, dignity and executive ability; because, while our Declaration of Independence and our Federal Constitution endure, he, as a signer of the one and an author of the other, is a part of the history of this Republic; for these reasons alone every physician of this age should honor him, and reverently transmit the record of his illustrious services to the generations that are to follow.

The beautiful green Mall at Washington, on which stand the Smithsonian Institution, the National Museum, and that splendid edifice, for which we are indebted to the medical officers of the Army, the Army Medical Museum and National Medical Library, is the appropriate site for the effigies of the pioneers in scientific research in this country. Already the bronze figure of Professor Henry graces this classic ground; soon that of Daguerre and those of Morse and Spencer Baird will follow. Whose face and form but of Rush should stand before that grand storehouse of the labors of the physicians of all time, his own literary works among the choicest treasures on its shelves, his treatise on insanity having for seventy years been the standard authority on that subject in Europe as in his own country?

Should the direct appeal which your Committee has made in the International issue of THE JOURNAL of the Association for May 3, to each of the hundred thousand physicians in the United States, "to send a contribution, however small, immediately to the Treasurer, Dr. DeWitt C. Patterson, of Washington, D. C.," fail to effect its object, it is proposed to make personal application to men, who are known to be in sympathy and accord with this movement, so when the Association next assembles in Washington, as it is hoped it will do coincidently with the opening ceremonies of the Colnmbian quadricentennial celebration, the corner-stone of the Rush Monument shall then be laid. By this time it may be definitely known whether the memorial shall be the imposing one your Committee have in view, or such humbler testimonial as the money they may then have in hand, shall justify them in obtaining. Your Committee desire that it shall be "a fitting memorial of our gratitude," expresive of the popular appreciation, by as many in number as possible of the members of the profession, of the eminent services of this great physician. When it is recalled how small a contribution from every physician in the United States, would suffice to erect a statue notable among the many notable ones already at the National Capital, it is still hoped that this last appeal may meet with generous response. Whatever be the result, your Committee pledge themselves to devote the sum they may have received, be that however little, to their contemplated purpose of thus commemorating "the greatest physician this country has produced."

Respectfully submitted:

ALBERT L. GIHON, Chairman.
GEORGE H. ROHÉ, Secretary.

Dr. D. W. Patterson, of D. C., Treasurer of the fund, read the report of collections for the fund, amounting to $1,505.69, the expenses being $17.55, leaving $1,488.19 in the fund.

On motion of Dr. J. M. Toner, of D. C., both reports were accepted and ordered to be published in THE JOURNAL.

Dr. P. O. Hooper, of Ark., read the report of the Trustees of THE JOURNAL:

REPORT OF THE BOARD OF TRUSTEES FOR THE PUBLICATION OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION FOR THE JOURNAL YEAR ENDING MARCH 31, 1890.

The Trustees for the publication of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION beg leave to submit this their seventh annual report:

The office of publication has been continued at Chicago since the foundation of THE JOURNAL, although the Trustees have at different times invited competitive bids for its publication in other cities, but always with this uniform result, that it can be issued cheaper in Chicago than elsewhere.

THE JOURNAL, or rather the Association, owns its own plant, which is well equipped for the work it has to do. The printing office consists of type, cases, bindery and all supplies necessary to the publication of THE JOURNAL except the press. The presswork is done under a favorable contract in the same building in which its office is located.

The value of the printing office and office fixtures is estimated at $2,021.26. A present expenditure of about three hundred dollars is required for type which needs renewal.

It will have been observed that THE JOURNAL has been edited for a little over a year by the Committee on Management, under the Trustees, one of whose members has been constituted Supervising Editor.

The weekly issue of THE JOURNAL has been mailed with uniform regularity on the day set for its publication, in good typography and with good paper.

The increase in circulation has been steady, as is shown by the report of the Committee on Management to the Trustees. It has now a weekly issue of 5,100 copies.

The total income of THE JOURNAL from subscribers, advertisers, etc., amounts (for the current year) to $14,154.91. The report of the Treasurer, Dr. R. J. Dunglison, will show the amount in the treasury now on hand.

All of which is respectfully submitted.

J. M. TONER,
P. O. HOOPER,
LEARTUS CONNOR,
W. T. BRIGGS,
ALONZO GARCELON,
I. N. LOVE,
W. W. DAWSON,
JOHN H. HOLLISTER,

On motion of Dr. W. Brodie, of Mich., the report was received and ordered to be published in THE JOURNAL.

Dr. C. Seiler, of Penna., having asked relative to the delay in the publication of some papers read at the last annual meeting, Dr. Hooper replied for the Editorial Committee.

Dr. C. G. Comegys, of Ohio, offered the following resolution:

Resolved, That the President appoint a committee of one from each State now represented at this session of the Association, to consider the report of the managers of THE JOURNAL of the Association, and to recommend, if any, what steps should be taken to enlarge the volume of THE JOURNAL, to strengthen its editorial management, and to widen its circulation, so that it shall be found abundantly in all parts of the Nation and represent the medical progress of the age.

Dr. Comegys, in support of his resolution, said: In offering this resolution I have no thought of disparaging, directly or indirectly, the management of THE JOURNAL now or at any time since the first day of its creation. It was a most important, indeed, an essential undertaking, and has, considering the resources at the command of the managers, been most ably conducted. Its foundation and superstructure have been reared by a wise and energetic Board of Managers. It is impossible to develop any controversy on that subject, and I am sure that the gentlemen who have edited and managed THE JOURNAL are as anxious as any of its supporters to increase its usefulness in any practical manner that can be pointed out. Therefore, in begging the support of members now for the passage of my resolution, I wish distinctly to be understood that its whole object is to ascertain if this great representative body of the true medical profession is desirous to enlarge the capacity of THE JOURNAL so as to make it universally acceptable—indeed, the pride and boast of the profession.

THE JOURNAL, thus far, has been nourished by the love of the Association for its offspring, and has been held up and made as strong as the annual contributions of the members, with advertising profits, could justify; yet, however, it can not stand alone, independent of the Association treasury, like many of our great local journals stand self-supporting; its capital is not abundant and sufficiently substantial for this.

Now, it seems to many of us that the time has come for a great movement to be initiated which shall place THE JOURNAL on such a deep and broad foundation, and give such largeness and increased capacity to its functions, that the annual subscribers gained so liberally at the annual meetings of the Association shall not fall away, but be held to the subscription list by a willing choice, and that the profession at large shall become its patrons.

Many of us believe that the day has dawned in the light of which THE JOURNAL shall lead the

Association, be its formidable and luminous guide and minister, and represent the intelligence, feeling and force of fifty thousand of the most self-sacrificing, cultured, influential and upright men in the United States.

Let us see if, at this auspicious meeting in this fair city of the Southland, a new and irrefragible bond of union shall not be cemented whose whole mission shall display a lofty and imperishable energy for the direction and support of our best humanity.

After discussion by Drs. J. V. Shoemaker, of Penna., and J. M. Keller, of Ark., on motion of the latter the resolution was laid on the table.

Dr. N. S. Davis, of Ill., was on motion permitted to reply to the remarks of Dr. Seiler.

On motion of Dr. Keller, his amendment relative to the selection of the officers by the Committee on Nominations, in place of by the Sections themselves, was called up.

A motion by Dr. Moyer, of Ill., to lay this on the table, was defeated.

A vote on the motion to repeal the action and have the election by the Committee on Nominations was adopted, 72 ayes, 61 nays.

The question being asked if it did not require a vote of three-fourths in favor to make this change, caused some discussion as to whether the amendment was to the By-laws or the Constitution. The President finally decided that the change was a constitutional one and required due notice and a three fourths vote to adopt it.

The following telegram, dated at Chicago, was read from Second Vice-President Kimball: "Am called back from here to Minneapolis. Cannot attend meeting. Wish you all a good time."

The Association then adjourned until Thursday at 10 A. M.

Reports of Sections.

Section of Practice of Medicine, Materia Medica and Physiology.

First Day.

Meeting called to order by the Chairman, Dr. John H. Musser, of Philadelphia, in the Vendome at 3 P.M.

The Secretary being absent, on motion of Dr. Sawyer, of Ohio, Dr. George Dock, of Galveston, Tex., was elected to fill the vacancy.

The Chairman called attention to the rules governing the proceedings of the Section.

The Chairman then read the *Annual Address*, which will be printed in full at an early date.

Dr. De Saussure, of Charleston, S. C., read a paper on *The Histories of Twenty-two Cases of Filaria Sanguinis Hominis.*

Dr. Lovering, of Ohio, spoke of the similarity between the symptoms as observed by Dr. De Saussure, and those of trichinosis as seen by himself.

Dr. Kelly, of Baltimore, mentioned some cases seen in Baltimore, under the care of Dr. Osler.

Dr. De Saussure, in closing, said all cases so far seen in the North had come from the South.

Several papers on the programme were not read owing to the absence of the authors. Dr. C. H. Shepard, of Brooklyn, N. Y., read a paper on *Rheumatism and its Treatment by the Turkish Bath.* Discussed by Drs. Ulrich, Didama, Cronin and Bailey.

Dr. J. W. Davis read a short paper on the *Use of Calomel in some forms of Chronic Dysentery and Flux*, which was discussed by several members. Adjourned.

Second Day.

Section called to order at 2:30 P. M.

Dr. George Fackler, of Cincinnati, O., read a paper on *Calomel as a Diuretic.*

Dr. Ulrich, of Wheeling, W. Va., gave his testimony as to the diuretic action of calomel.

Dr. Caldwell, of Florida, had used bichloride in the dose of ⅛ gr. t. i. d., along with ammonium chloride, and thought the combination gave better results than calomel, especially in regard to salivation.

Dr. DeSaussure, of South Carolina, said he had used bichloride as a diuretic with good results, and also calomel, but gave the latter in larger doses than the writer of the paper.

Dr. Fackler said that on the whole calomel was least liable to salivate.

Then followed the discussion on the *Continued Fevers of the South*, opened by a paper by Dr. W. W. Johnston, of Washington, D. C., read by the Secretary.

Dr. Wall, of Tampa, Fla., continued (see Dr. Wall's paper), followed by Dr. Happell, of Tennessee, Dr. Shephard, of Tennessee, and Dr. Dock, of Texas (see papers).

Dr. Sears, of Texas, said he had had a large experience with continued malarial fever, cases of which often run into the typhoid state. This he called typho-malarial, somewhat after the analogy of typhoid-pneumonia, etc. He said all patients of his who were treated with quinine recovered. He gave them quinine in doses of one to two ounces during the progress of the disease, and though the fever was not reduced, he attributed the recoveries solely to the drug.

Dr. Van Eman, of Kansas City, said that all the continued fevers seen in his practice had been enteric, as demonstrated by autopsies in fatal cases. He thought two ounces of quinine more likely to kill than cure.

Papers were read on *Specific Treatment of Typhoid Fever*, by Dr. J. H. Van Eman, of Kansas City; *Has Progress Been Made in the Treatment of Typhoid Fever?* by Dr. Happell, of Tennessee; *Treatment of Insomnia and Neuralgia by Butyl*

Chloral Hydrate, by Dr. H. A. Hare, of Philadelphia.

Dr. Crawford, of Illinois, presented a patient showing obscure symptoms, and requested a diagnosis from members of the Section.

The Chairman suggested that the Secretary request a number of members to examine the patient and report.

Dr. J. P. Sawyer, of Cleveland, O., read a paper on *Auto-Intoxication from Nitrogenous Elements of the Food When Taken in Excess.*

The Chairman asked the Section what action it wished to take in regard to the suggestion of Dr. Johnston, viz.: to have a collective investigation of the continued fevers of the South, with a view of establishing their nature.

A motion was made and carried that a committee be appointed by the chair to report next year.

The Chairman appointed as Section Nominating Committee the following: Drs. Vaughan, of Michigan, Chairman; French, of Ohio; De Saussure, of South Carolina; Happell, of Tennessee, and Sawyer, of Ohio.

The Section then adjourned to meet at 2 P. M. on Thursday.

Section of Ophthalmology.

FIRST DAY.

The Section was called to order on Tuesday, at 3 P.M.

The Chairman, Dr. S. C. Ayres, read an excellent address (see page 789.)

Dr. Cheatham, of Louisville, read a paper on *The Use of Jequirity*, in which he advocated the use of powdered jequirity in cases of trachoma with pannus. Several cases thus treated were reported.

Dr. T. E. Murrell, of Little Rock, Ark., read a paper entitled *A Danger in the Use of Jequirity Heretofore Unmentioned*, in which reference was made to two cases in which instillation of jequirity was followed by acute inflammation of the lachrymal sac, which necessitated opening, and afterwards probing had to be done to overcome the stricture.

These papers were discussed by Drs. Post, St. Louis; Bradford, Ky.; Tilley, Chicago; Thompson, Kansas City; Savage, Nashville; Frothingham, Detroit; Dickinson, St. Louis; Scott, Cleveland, O.; Holmes, Cincinnati; Fulton, St. Paul; Smith, and Baker, Cleveland.

Dr. J. E. Sinclair's paper on *Enucleation in Panophthalmitis* was read by title.

Dr. A. R. Baker, of Cleveland, O., read a paper on *Functional Nervous Diseases*, in which he stated that the majority of the cases of muscular asthenopia are due to errors of refraction, and that it should not be forgotten that a certain neurotic element is at the bottom of all the symptoms. This paper was discussed by Drs. Hotz, Chicago; Frothingham, Detroit; Savage, Nashville; Minney, Topeka, Kan.; Price, Nashville; Connor, Detroit; De Schweinitz and Jackson, Philadelphia.

Dr. C. H. Goode, of Cincinnati, read a *Report of Case of Sympathetic Inflammation two weeks after Enucleation of the Injured Eye.* The case was that of a boy who was struck in the eye by a stone. The eye was enucleated on account of the great extent of the traumatism. Two weeks after the operation the patient returned with iritis. V. $\frac{2}{10}$. Atropin used; leeches applied. The condition improved. A relapse took place, but recovery ensued with V. $\frac{2}{10}$, and nothing anomalous in the fundus. This paper was discussed by Drs. Cheatham, Louisville, and Fulton, St. Paul.

Dr. F. C. Hotz, of Chicago, then exhibited a simple and reliable astigmometer. The claims made for the instrument are its simplicity and the quickness with which astigmatism is diagnosticated, and the position of the meridian discovered. This paper was discussed by Dr. Murrell, of Little Rock, Ark.

Dr. Frothingham moved that all ophthalmologists attending the meeting of the Section give their names and address to the Secretary. Carried.

The committee appointed at the Fortieth Meeting by the Ophthalmological Section, with the consent of the General Assembly, to urge the adoption of such measures by the Government in the Census of 1890 as shall contribute more efficiently to the causes of blindness in the United States, reported that after due correspondence, a schedule had been adopted which will be placed in the hands of every physician, which will greatly facilitate the work. The report of this committee will be published in full in THE JOURNAL.

SECOND DAY.

The Section was called to order by the Chairman at 2:30 P.M. The Committee on Nominations reported that they had unanimously agreed on Dr. Leartus Connor, of Detroit, as Chairman, and Dr. T. E. Murrell, of Little Rock, Ark., as Secretary.

Dr. G. E. Schweinitz, of Philadelphia, read a paper on a *Clinical Study of a Series of Cases Exhibiting Slight Macular and Perimacular Changes.* The changes were noted in cases of astigmatism, and were divided into the following groups: 1. Asymmetrical lesion situated in the macular region of the eye presenting the greater error of refraction. 2. Symmetrical macular changes—refractive error. 3. Asymmetrical lesion, situated in the macular region of the eye presenting the smaller error of refraction. 4. Symmetrical macular changes, asymmetrical refractive error; probable influence of constitutional derangement. 5. Slight macular changes—no apparent result if exposed to bright sunlight. This paper was discussed by Drs. Cheatham, Dickenson, Murrell, Randall and Tilley.

Dr. Murrell read a paper on the *Correction of the Smaller Forms of Astigmatism*, in which he strongly advocated the correction of all forms which gave rise to any asthenopic symptoms. Atropine was used in all cases, so as to correct the whole amount of the ametropia. The paper was discussed by Drs. Taylor, Thompson, Randall, Savage, Connor, Hotz, Jackson, Lippincott, Gardiner, Starkey and Frothingham.

Dr. W. T. Montgomery, of Chicago, not being present, the Chairman read his paper on *Progressive Hypermetropic Astigmatism* by title.

Dr. J. Morrison, of Louisville, read a paper on *A Case of Transplantation without Pedicle for Cicatricial Entropium*. The case was one of marked entropium produced by a premature blast. The integument was taken from the arm. The size of the flap was 3½ inches long by 1½ inch wide. The case did very well After three weeks the surface contracted to one-third the original size. Discussed by Drs. Holmes, Starkey and Hotz.

Dr. Edward Jackson, of Philadelphia, read a paper on *Tests of Visual Acuteness and the Standard of Normal Vision*, in which he advocated a more definite and accurate means of testing than the usual test types. Illumination to be reliable must be constant, and a good gas argand burner at about 15 inches from the card was recommended. It was maintained that Snellen's angle of 5° is too large, 4.5° being quite sufficient. A number of test cards made under this angle were exhibited. In order to keep exact records of visual tests a card was exhibited in which the test was a square figure subtending a visual angle of 3′, from one side of which a 1′ square was removed. This paper was discussed by Drs. Starkey and Randall.

Dr. Robert Tilley, of Chicago, read a paper in which a case of *Left Lateral Homonymous Hemianopsia associated with a wound of the Occipito-Parietal Region* was described. The case was that of a man who was struck on the head, walked to his home and fell unconscious and remained so for some time. Eyes normal, left pupil larger than right. V. = fundus, a slight choroidal crescent in field of vision. The line of vision was perfectly vertical except at the point of fixation. The wound was situated on the right side of the head. This paper was discussed by Drs. Schweinitz and Jackson. Dr. Tilley also exhibited an instrument for the rapid measurement of the radius of curvature of lenses.

Dr. C. R. Holmes read a paper on *Hæmorrhage after Cataract Extraction*. The case was one of double black cataract. The first eye was operated and healed normally; the second eye was operated on, operation normal. Two days afterwards hæmorrhage took place. The eye was enucleated six weeks afterwards. Dr. Holmes also read a paper on *The Use of Boracic Acid and Massage in Pannus*. After using this process and remedy for one year he has adopted it entirely. It is rapid and most effectual. Discussed by Drs. Tilley, Hotz and Frothingham.

Third Day.

The Section was called to order by the Chairman at 2:45 P.M. Dr. Jno. Fulton's paper on the *Amblyopia of Strabismus* was read by title.

Dr. R. Alex. Randall read a paper on *The Use of Mydriatics in the Correction of Errors of Refraction*. The correction of small forms of astigmatism was advocated. The use of mydriatics for fitting glasses was strongly advised, and full correction was laid down as the general rule, very few exceptions being admitted. The paper was discussed by Drs. Smith, Chattanooga; Lippincott, Pittsburg; Schweinitz, Philadelphia; and Jackson, Philadelphia.

Dr. Geo. E. Frothingham, of Detroit, read a paper entitled *A Case of Lenticular Astigmatism acquired by the long use of Spectacles having Faulty Position*. Glasses + 0.75 were prescribed for a young man, who afterwards received from an optician + 3 for reading. When examined four years later a myopic astigmatism of 0.50 on the vertical meridian was discovered, which under atropine became hypermetropic astigmatism + 0.50 in horizontal meridian. The change in refraction was attributed to the astigmatism produced by the faulty position of the lens, requiring an irregular contraction of the ciliary muscle to neutralize it, and which became permanent. The paper was discussed by Drs. Jackson, Philadelphia; Tilley, Chicago; Savage, Nashville; and Randall, Philadelphia.

Dr. Thompson, of Kansas City, read a paper describing an easy and reliable way of preserving macroscopical specimens.

Dr. Sinclair, of Nashville, Tenn., reported *A Case of Sarcoma of the Choroid*. The disease was found in a lady. Has had pain in the eye for two years. The lens was opaque. Although Dr. Sinclair suspected tumor he performed iridectomy, giving relief for six weeks. Pains returned and the eye was enucleated. The microscopical examination revealed a small spindle-shape sarcoma of the choroid. Three years have elapsed and there are no symptoms of return of the disease.

Dr. Smith, of Chattanooga, exhibited a case for carrying the ophthalmoscope, its merits being that it occupies but little space and protects the ophthalmoscope.

The Chairman appointed Drs. Frothingham, Jackson and Gardiner on the Committee on Publication.

Dr. Lippincott exhibited an instrument for syringing the anterior chamber.

Dr. Frothingham moved a vote of thanks to the Chairman and Secretary.

Dr. Gardiner moved that Dr. Savage, as mem-

ber of the Entertainment Committee, be requested to convey the thanks of the Section to the Ladies' Committee for the hospitable manner in which they have received the visiting ladies.

The meeting then adjourned.

Section on Diseases of Children.

FIRST DAY.

Meeting called to order at 3:30 P.M., Dr. I. N. Love, Chairman, presiding.

The annual address of the Chairman was by consent postponed until the following day.

On motion of Dr. Latimer, of Maryland, the Committee on Dietetics was invited to coöperate with this Section, and if agreeable to the Committee, to become a part of this Section. Carried unanimously.

Dr. G. Frank Lydston, of Chicago, read a paper entitled, *A Plea for Operative Interference in Peritonitis, with especial reference to Peritonitis of Obscure Origin in Children.* The doctor in his paper deprecated the opium treatment, which he regarded as not only useless but many times positively harmful. He regards peritonitis emphatically as a surgical disease, and there is absolutely no such thing as primary idiopathic peritonitis. He believes that physician and surgeon should treat the cases conjointly, the physician calling on the surgeon only after the failure of medicinal treatment, but soon enough to be of use, citing several cases illustrating his strong position, regarding nearly all forms as subjects for surgical interference. He further observed that children were more liable to inflammation of this membrane by the comparatively heavy weight and lighter supporting ligaments of abdominal viscera, causing heavier impact from concussion.

Dr. H. A. Hare, of Pennsylvania, disagreed with the writer in his sweeping assertions. Paralleled serous inflammation as being amenable to medicinal treatment, and only in septic cases was surgical interference indicated. He referred to Dr. Fitch, of Boston, who reported that out of seventy-two cases, 40 per cent. had recovered by medicinal and only 11 per cent. by surgical means. Believed that saline cathartics should only be used where there was an absolute certainty in the diagnosis, and where there was no weakening or perforation of the intestinal walls. He believes that cold is one of the most common causes of the so-called idiopathic peritonitis.

Dr. Larrabee, of Kentucky, said that while not agreeing with all the deductions contained in the paper, he commended it as calling attention to a most important subject for study.

The prevailing bacterial craze tends to make us timid in operative procedure, and would account for some failures to operate early when indicated. Infantile peritonitis causes many deaths from our failure to recognize it as such in time to treat it. He strongly advocated the use of opium, as borne out by results in his own practice. He had found intraperitoneal inflammation coming from constipation apparently due to the sedentary life of school-children. Early operation was correct, but be sure there was pus.

Dr. Wm. Perry Watson, of New Jersey, liked Dr. Lydston's position, and probably would have the operation performed earlier than heretofore. He believed that operation was called for more frequently in perityphlitis than in acute peritonitis.

Dr. Love, of Missouri, emphasized importance of early diagnosis. Ascertain certainly that there is or is not a history of previous injury. He cited interesting cases of supposed typhoid fever in which the history and autopsy showed peritonitis. He would impress upon parents of children the necessity of close observation after even slight injury, until all possible danger is past.

Dr. E. A. Wood, of Pennsylvania, always gave opium. Never operates until other means are exhausted, and then only when pus is shown to be present, as evinced by threatened pyæmia or septicæmia. Cited a case of a woman in whom the indications called strongly for surgical interference, who got well without operation; another case was treated to the full extent of medicine, and when about to die was saved by timely operation.

Dr. W. D. O'Brien, of Pennsylvania, thinks we are timid in the use of opium in infantile peritonitis. He cited a case of a child in its seventh year with acute peritonitis, in which he ordered morph. sulph. to be administered as often as necessary to keep the child quiet and free from pain. To gain this result the child received 55 grs. (Power & Wightman's) in forty-eight hours, dispensing it himself, and for fear of non-absorption he caused it to be administered in solution.

Dr. Lydston closed the discussion with the statement that he referred more particularly to the so-called idiopathic cases which were actually traumatic. He did not condemn the opium treatment *per se*, but believed it obscured the surgical indications.

Dr. S. Henry Desson, of New York, sent a paper entitled *Therapeutical Value of Antipyrin in Diseases of Children*, which was read by Dr. Wm. Perry Watson. Dr. Desson believes that this is a type of the most valuable remedies of recent introduction. Its action is not only antipyretic, but sedative; useful as an antipyretic only in the pneumonia of children. Most marked success had been shown in the treatment of chorea; here it acts purely as a sedative. In rheumatism he believes its action to be antiseptic. Has found that in pertussis its action is to shorten the duration of the disease.

Dr. Larrabee, of Kentucky, in opening the discussion, stated that he regarded antipyrin as a very dangerous drug, because of its sedative ac-

tion on the heart. A pale countenance, with a high fever, was a contraindication.

Dr. Hare considered the use of antipyretics of this class as uncalled for, as well as dangerous.

Dr. G. W. McNeil, of Pennsylvania, uses antipyrin in cases of pneumonia, for its antipyretic and sedative effects. Had found that when the blueness occurs from its administration, the use of digitalis would prevent this alarming symptom.

The Section adjourned at 6 P. M. to meet on Wednesday at 3 P. M.

SECOND DAY.

In the absence of Dr. Love, on motion, Dr. Larrabee, of Kentucky, was called to the Chair.

The Significance of High Temperature in Children was the title of a paper by Dr. W. A. Stowell, of New York. He called attention to the temperature as influenced by birth, arterial or venous currents, and its variation during day or night, and to many physiological facts bearing on the subject. Thought it was not necessary to use thermometer 15 to 20 minutes at a time. Called attention to many simple ailments giving rise to ephemeral temperatures. Cited cases where there was a very marked variation of temperature. Showed that in certain diseases the temperature varied greatly from accepted standards. Denied that the new antipyretics, such as antifebrin and others of that class, had succeeded, with him, in reducing fever satisfactorily. Finds that they are no better than the older aconite and veratrum. Thinks that temperature may be reduced by proper feeding and stimulants.

Dr. Ephraim Cutter agreed with the author in the matter of feeding, as influencing the temperature kindly.

Dr. Wm. Perry Watson does not always treat a rise of temperature, as he does not consider it as always alarming. He gets at and if possible relieves the cause of the fever, and afterward, if necessary, uses antipyretics to help nature along. Recommended, in intelligent families, the use of the sponge, with cold, hot or tepid water. Carbonic acid drinks, which are given in small quantities and frequent intervals.

Dr. Frank Woodbury, of Pennsylvania, differentiates his cases in high temperature, and believes that in cerebral fevers, the cooling cloths to head should extend over eyes, to prevent reflex symptoms. Upheld Graves' theory of feeding fever by proper diet.

Dr. J. A. Work, of Indiana, applied tepid water to head and had it fanned for an hour or two. He had not lost one out of fifty cases of pneumonia, and believed that diet and attention to the eliminative functions was proper treatment, as proved by his success.

Dr. E. F. Brush, of New York: There is much in expression in temperature. Called attention to some experiences in the rapid rise of the mercury in the rectum. When it rose rapidly after insertion he knew his fever was not going to be dangerous; when it rose slowly he always looked out for serious results. Flushes the bowels with marked success.

Dr. B. H. Boyd, of Indiana, believed that the eliminating processes should be encouraged.

In closing, Dr. Stowell did not wish to be understood as using veratrum in excessive doses. Has found calomel useful in beginning of fevers.

Dr. Larrabee, of Kentucky, said he tried to manage rather than to treat fevers; less medicine the better. Hyperpyrexia should be treated, but not simple pyrexia. The cases of high temperature due to neuroses were best treated by warm pack. Advocated rectal injections with cold water coils to head. A temperature of 104° needed treatment.

The Section then adjourned to the Section of Laryngology and Otology, on Broad street, to listen to the paper and discussion on *Croup and Diphtheria.*

Dr. R. Early read a paper in which he took his audience back to the old authors, who evidently had, but did not always recognize diphtheria. Used ipecac. pot. chlor. and sod. chlorate.

Dr. Daly, of Pennsylvania, advocated the calomel treatment.

Dr. Brush, of New York, gave a history of thirty-three cases of intubation, of which but three recovered. His treatment is to feed them and put them flat on the back without pillows. He feeds them with a nurse bottle very satisfactorily. He believed that diphtheria was essentially septic croup. Did not incline to the idea of bad sewerage being a potent factor in causation.

The Section then returned to their rooms, and the Nominating Committee, through its Chairman, Dr. C. E. Early, reported that Dr. William Perry Watson, of New Jersey, was their choice for Chairman, and Dr. W. R. Hare, of Pennsylvania, for that of Secretary.

The Section then adjourned to meet May 23, at 10 A. M.

Medical Jurisprudence.

FIRST DAY.

A paper by Dr. Norman Kerr, of London, delegate of the British Medical Association, entitled *The Need of a New Criminal Jurisprudence Affecting Inebriety*, was read by Dr. Everts, of College Hill, O. The Secretary, Dr. T. D. Crothers, read a paper on *Some New Medico-Legal Questions Relating to Inebriety.*

The following papers were read by title: *Medico-Legal Significance of Facts Common to Insanity and Inebriety*, by T. L. Wright, Bellefontaine, O.; *The Psycopathic Sequences of Hereditary Alcoholic Entailments*, by Charles H. Hughes, St. Louis, Mo.; *The Medico-Legal Relation of the Physician*

to the Inebriate and Inebriety, by I. N. Quimby, Jersey City, N. J.; after which a general discussion was opened by Dr. Everts. He said the need of a change in the laws relating to the punishment of inebriates was evident. The question of responsibility was a disputed one; still, as medical men, this could be adjusted, and the sense of the community would not be shocked by holding these men responsible. He urged that further legislation was needed, and the profession must aid in this direction.

Dr. Brower, of Chicago, Ill., believed that changes of law must be made in the interests of justice. He related some cases where injustice had followed by failure to realize the actual condition of the inebriate, and expressed a conviction that much of the present confusion in courts would pass away when this subject was better understood.

Dr. Knapp, of Lincoln, Neb., thinks that only punishment would diminish the crime of these cases. He expressed great doubt as to the irresponsibility of persons who commit crime when intoxicated.

Dr. Ingles, of Detroit, believes that the use of alcohol is always followed by brain defects and changes. The question of responsibility is a difficult one, and in most cases the inebriate is not sound.

Dr. Cook, of Oxford, O., is convinced that the inebriate is not always sane, and that great care should be exercised in the question of his mental state at the time of the commission of any act in question.

A general discussion followed, after which a paper was read by Dr. D. R. Brower, of Chicago, on *Medico-Legal Relations of Central Paralysis*. Discussion of this paper was postponed until next day.

SECOND DAY.

The election of officers resulted in Dr. T. D. Crothers, of Hartford, Conn., being elected President, and Dr. H. N. Moyer, of Chicago, Ill., was elected Secretary.

The first paper was read by Dr. William Porter, of Buffalo, N. Y., entitled: *What is the Medico-Legal Status of the Abdominal Surgeon?*

Dr. J. G. Kiernan, of Chicago, Ill., spoke as follows: The only legal question which can be raised, in deciding the questions of responsibility of the abdominal surgeon, is whether he has exerted "due diligence" in the case. But to demonstrate this "due diligence" to a jury requires considerable more than ordinary evidence, since such peculiar influences are brought to bear. By aid of the press a grand jury is induced to indict; it of course hearing one side only. The civil jury is influenced by this finding. If the malpractice blackmailer were required to give bonds it would have a decidedly good effect.

Dr. Moyer said: The question of consent is not the only one involved in these surgical procedures, for if the operation is not in accordance with the generally accepted doctrines upon that subject, a person will come very close to rendering himself liable for a trespass. A case in point occurs to me, in which a man brought suit for the removal of his testicles, the operation being undertaken for some frivolous reason, but with the full consent of the patient. The case was settled out of court by the payment of a round sum by the physician. If for no good reason the uterine appendages are removed, it is a question if the physician would not be liable under the law in most of our States.

Dr. H. McIntyre, of St. Louis, said: The necessity for proper surgical drill before attempting abdominal operations. Make plaintiff responsible by sufficient bond for indemnity for damage done the doctor before suit can be entered. The need of a general change of our laws in justice to the surgeon. Illustrative case where young man wished to be castrated and operation was declined, but circumcision was done with great benefit. Good results in Battey-Tait operations.

The following papers were read consecutively: *Medico Legal Relations of Abdominal Surgery*, by Albert Vanderveer, Albany, N. Y., read by title; *Medico-Legal Bearings of the Battey Operation*, by Robert Battey, Rome, Ga., read by title; *What is the Medico-Legal Status of the Abdominal Surgeon*, by William Porter, Buffalo, N. Y.; *Medico-Legal Aspects of Gunshot Wounds of the Abdomen*, by Nicholas Senn, Milwaukee, Wis., read by title; *The Responsibility in Cases of Intestinal Obstruction*, by B. T. Shimwell, Philadelphia, Pa.; *Some Special Reasons why the Laparotomists should Consider the Medico-Legal Aspects of Abdominal Surgery*, by Henry O. Marcy, Boston, Mass.; *Exploratory Laparotomy from a Medico-Legal Standpoint*, by William C. Wile, Danbury, Conn., read by title; *The Medico-Legal Responsibility in Abdominal Surgery*, by J. D. S. Davis, Birmingham, Ala., read by title; *The Medico-Legal Questions which arise from the Mistakes of Abdominal Tumors for Pregnancy*, by David W. Yandell, Louisville, Ky., read by title; *The Legal Responsibility in Surgery of the Abdomen*, by Thomas H. Manly, New York, N. Y.

These papers were discussed by Dr. Price, of Philadelphia. He believed all these cases should be operated on at the time and place and not left to the future.

Dr. Shimwell, of Philadelphia, differed from Dr. Manly in the safety of the operations of the abdomen. Dr. Marcy also differed, and urged that more care and special training are necessary in these cases. All the operations should be prompt and not put off.

Dr. Manly replied defending his position of advising great caution in the operations of the abdomen.

DOMESTIC CORRESPONDENCE.

To the Professions of Medicine and Pharmacy, and the Medical and Pharmaceutical Colleges of the United States and Canada.

At the last meeting of the *American Association for the Advancement of Science*, held at Toronto, Canada, September, 1889, the undersigned were appointed a committee to promote the use of the metric system of weights and measures among professional men, and especially to secure its more general adoption by the physicians and pharmacists, and the chemical and pharmaceutical manufacturers of our country.

The metric weights and measures were legalized in this country by Congress in 1866, and are now in actual use by most students of natural history, by some scientific periodicals, by the graduates of our schools of civil and mining engineering, and especially by all scientists and chemists throughout the world, without regard to their mother tongue. It is nevertheless greatly to be regretted, that a large majority of our physicians, pharmacists and druggists, still continue to ignore its merits or discountenance its adoption.

The merits of the metric system have been so thoroughly recognized that it is adopted by most civilized nations. Further argument should be unnecessary to secure its universal adoption in our hemisphere, where it is already in exclusive use by all the States of Southern and Central America.

It is a strange and irreconcilable fact, that the Governments of Great Britain and the United States, or the English speaking peoples, should stand quite alone in their stubborn and persistent adherence to the use of heterogenous standards of weights and measures, completely devoid of system in themselves, or of any practical and rational relationship to each other. And it is especially strange, in view of the practical utility of the metric system, that the professions of medicine and pharmacy in this country should in this respect at the present time, be behind the various arts of engineering, as must be conceded by those familiar with the facts.

This condition of things is not due to any inherent defects in the system itself, but to indolence and a want of practical acquaintance with the metric system, which largely amounts to positive ignorance, that is unjustifiable, since it hinders the proper assimilation of the great mass of scientific literature in which the system is exclusively used, tends to increase the risk of errors in our professional work, and imposes much unnecessary labor on the student.

The educated representatives of medicine and pharmacy in this country favor, and would gladly adopt the metric system, but find their efforts in this direction constantly hampered and nullified by the opposition of a large number of both professions who, through conservatism or lack of education, fail to unite in any concerted effort for its more general adoption and use.

It is unnecessary here to expatiate on the advantages of the metric system of weights and measures. The identity of the single factor with our system of numeration, the perfect correspondence between measures of weight and capacity, its approval by a large majority of the nations of the world, and especially its actual use by scientists and chemists without exception, render its ultimate adoption by all arts dependent on natural sciences, and especially by medicine and pharmacy, a matter of necessity and certainty. Its adoption is not to be viewed as an experiment, as would be such modifications of our present forms as have been proposed by some individual enthusiasts, and which have received but little consideration by any but their inventors.

The argument that our system of weights and measures is the same as that in use in Great Britian, with whom we have most intercourse, is without foundation. The system we use is well called the *American system*, for no other nation uses it. The *troy* pound has been abolished in Great Britain, and no longer appears in their text-books, and the fluid measures are different in the proportion of 4 to 5.

If identity is to be preserved between our measures and those of any other nation, some change must be made, and we believe there is substantial unanimity in a preference for the metric system as in place of our old system if any change is made.

It is wholly unnecessary to defer the adoption of this much needed reform until the prejudices, fallacious arguments, or educational deficiencies manifested by a large contingent of pharmacists and physicians shall have been overcome. Such a period must necessarily be remote, and indefinite, while the method herein proposed avoids any delay. The difficulty of securing any change on the part of men already in active business is well shown by the fact, that the simple innovation in the present U. S. Pharmacopœia of expressing quantities in *parts by weight*, demonstrates how large a number of pharmacists are incapable of comprehending so simple a relationship when applied to the complicated empirical and antiquated systems of weights and measures in present use.

One of the principal reasons why the metric system has not yet been adopted in this country by professional men, is the indifference shown by our professional schools. Every student of medicine and pharmacy is practically obliged to learn a system of weights and measures new to him when he begins professional study. He may

have learned the apothecary tables in his school days, but he has not used them, and as elements of thought the grain and drachm are entirely new to him. If the gram and cubic centimeter are substituted for them, no additional labor is entailed upon the student. It must not be supposed at the present time, that professors who are rarely competent, are ignorant of this system, and hence this change would not entail any additional labor on the professors. In fact it would diminish the labor, of both professors and students, for in medical schools at the present time, instruction is given in both systems, and it would simply make the methods of instruction uniform in the chairs of materia medica, pharmacy, and chemistry, where now is a confusion.

The pharmacopœia does not now recognize the troy system, and if the doses were taught in metric terms only, the old system would die out with the passing off of the present generation of practitioners. No inconvenience would be caused to any one, those who are to old to learn, could go on using their present mode, and the new graduates would use that which they are taught.

It should be particularly remembered that we are not trying to introduce a new system but to drop an old one, which is as irrational and unscientific as any other relic of barbarism. *It is especially opportune at this time when a new revision of the Pharmacopœia of the United States is pending, that the committee of revision, as well as the pharmacists, druggists, and physicians of this country, should have their attention particularly directed to this important subject.* For the use of these professions, six lines contain all that is necessary, as follows:

1000 milligrams make one gram, or liter.
1000 grams or cubic centimeter make one kilo.
1000 kilos. make one ton.
65 milligrams make one grain.
15½ grains make one gram.
31 grams make one ounce troy.

In writing prescriptions, a vertical line should be drawn between grams and milligrams, all figures on the left read grams, all on the right to three figures, respectively deci-, centi-, and milligrams.

Chemists think in milligrams and grams only, and pharmacists and physicians may do likewise, reducing our system to two denominations only. In the arts the milligram is not divided.

As the metric system is legal throughout the United States any physician is entitled to present a metric prescription to the druggist. All boards of examiners in medicine and pharmacy, whether State or collegiate, are justified by law to exact, and *should demand from every candidate for graduation, or for license a knowledge of the metric system.*

We also earnestly recommend, that schools of medicine cease to give instruction in the apothecary system of weights and measures for which there is no longer any reason, and that in the schools of pharmacy the merits of the metric system should be presented with the prominence that its utility, and the near prospect of its adoption justify, in the best way to secure its immediate use as the exclusive system of weighing and measuring in medicine and pharmacy, and in the manufacturing arts correlative with them. And for the further promotion of this object, we recommend that an addition be made to the pharmacy laws now in force in most of our States, prescribing that all persons receiving a license to sell drugs and dispense medicines shall be required to provide themselves with a set of metric weights.

Prof. Wm. H. Seaman, Washington, D. C.
Dr. Fred. Hoffmann, New York.
Prof. Robt. B. Warder, Washington, D. C.
Committee A. A. A. Sc.
Prof. T. C. Mendenhall, Pres. A. A. A. Sc.
April 15, 1890.

The Census of Hallucinations.

To the Editor:—May I ask for the publicity of your pages to aid me in procuring coöperation in a scientific investigation for which I am responsible? I refer to the *Census of Hallucinations*, which was begun several years ago by the Society for Psychical Research, and of which the International Congress of Experimental Psychology at Paris, last summer, assumed the future responsibility, naming a committee in each country to carry on the work.

The object of the inquiry is twofold: 1, to get a mass of facts about hallucinations which may serve as a basis for a scientific study of these phenomena; and 2, to ascertain approximately the *proportion of persons* who have had such experiences. Until the average frequency of hallucinations in the community is known, it can never be decided whether the so-called "veridical" hallucinations (visions or other "warnings" of the death, etc., of people at a distance) which are so frequently reported, are accidental coincidences, or something more.

Some 8,000 or more persons in England, France and the United States have already returned answers to the question which heads the census sheet, and which runs as follows:

"*Have you ever, when completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice; which impression, so far as you could discover, was not due to any external physical cause?*"

The "Congress" hopes that at its next meeting, in England in 1892, as many as 50,000 answers may have been collected. It is obvious that for the purely statistical inquiry, *the answer "No" is as important as the answer "Yes."*

I have been appointed to superintend the Census in America, and I most earnestly bespeak the coöperation of any among your readers who may be actively interested in the subject. It is clear that very many volunteer canvassers will be needed to secure success. Each census blank contains instructions to the collector, and places for twenty-five names; and special blanks for the "Yes" cases are furnished in addition. I shall be most happy to furnish these blanks to any one who will be good enough to make application for them to Yours truly, PROFESSOR WM. JAMES.

Harvard University, Cambridge, Mass.

BOOK REVIEWS.

TEXT-BOOK OF MEDICAL CHEMISTRY. For Medical and Pharmaceutical Students and Practitioners. By ELIAS H. BARTLEY, B.S., M.D., Prof. of Chem. and Tox., Lecturer on Diseases of Children in Long Island College Hospital; late Chief Chemist to the Dep't of Health, Brooklyn, etc. Second edition, revised and enlarged. Pp. xi, 423. Philadelphia: P. Blakiston, Son & Co. 1890.

This is a compact and useful volume. Well adapted for use as a text-book for all classes of students. The present edition has been brought up to date, and leaves but little to be desired within the scope outlined by the author; it is, however, a work on descriptive and not analytical chemistry.

A TREATISE ON MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By JOHN V. SHOEMAKER, A.M., M.D., Prof. of Mat. Med., Phar. and Ther. in the Medico-Chirurgical College of Philadelphia, and member Am. Med. Ass'n, and JOHN AULDE, M.D., Dem. of Clin. Med. and of Physical Diagnosis in the Medico-Chirurgical College of Philadelphia, and member of Am. Med. Ass'n. In two volumes. Vol. I, pp. xii-353. Net price, cloth, $2.50, sheep, $3.25. Philadelphia and London: F. A. Davis. 1889.

This new work presents some decidedly novel features, and in so far as one may judge from an inspection of the first volume, is destined to become a popular treatise. About one-third of volume I is devoted to general considerations respecting materia medica, pharmacy, pharmacology and therapeutics. The chapters on pharmacy and pharmacology are much more complete than those usually found in works of this character, and indeed we observe a growing tendency to instruct the profession much more fully on this subject than was formerly the case. In connection with the subject of general therapeutics, a convenient dietary for the sick is given.

The remaining two-thirds of the volume is occupied with a discussion of remedies and remedial agents used in the treatment of disease, but not properly classed with drugs. These are subjects which very properly occupy a place in works on materia medica, but unfortunately they are usually accorded a very narrow limit. In the present work they form a very important part of the whole, and are considered under the following heads: Electro-therapeutics, oxygen, hydro-therapeutics, masso-therapeutics, heat and cold, mineral waters, metallo-therapy, transfusion, hypnotism, earth dressing, Baunscheidtismus (a method of counter-irritation), climatology, light, music, blood-letting, and suspension. Most of these subjects are very fully treated, the chapters on electro-therapeutics and oxygen being particularly valuable.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 17, 1890, to May 23, 1890.

First Lieut. Leonard Wood, Asst. Surgeon, having completed at Newport the duties assigned him in S. O. 29, April 30, Div. of the Pacific, will return to his station in that Division. Leave of absence for one month is granted First Lieut. Leonard Wood, Asst. Surgeon U. S. A. Pars. 19 and 20, S. O. 115, A. G. O., May 16, 1890.

Major Leonard Y. Loring, now on sick leave of absence until further orders, is relieved from duty in the Dept. of Arizona. Par 14, S. O. 115, A. G. O., May 16, 1890.

By direction of the Secretary of War, the following named officers of the Medical Dept. will proceed to Berlin, Germany, as delegates to the International Medical Congress which is to meet in that city in August next: Lieut.-Col. Charles H. Alden, Surgeon; Major John S. Billings, Surgeon. After the adjournment of the Congress the officers named will return to the United States and rejoin their proper stations.

By direction of the Secretary of War, Major John S. Billings, Surgeon, will while abroad under his orders to attend the International Medical Congress at Berlin, Germany, before returning to the United States, visit, on official business, such points in Great Britain, France, Italy, Germany, Belgium, Holland, and elsewhere, as may be deemed necessary by the Surgeon-General of the Army, and under such special instructions as he may receive from the Surgeon-General. Pars. 11 and 12, S. O. 116, A. G. O., Hdqrs. of the Army, Washington, May 17, 1890.

First Lieut. Theodore F. DeWitt, Asst. Surgeon, is relieved from duty at Willett's Point, New York, and will report in person to the commanding officer, Ft. Ringgold, Tex., for duty at that station, relieving Capt. W. Fitzhugh Carter, Asst. Surgeon. Capt. Carter, upon being thus relieved, will proceed to West Point, N. Y., and report in person to the Superintendent U. S. Military Academy for duty at that station. Par. 2, S. O. 119, A. G. O., May 21, 1890.

Capt. Robert B. Benham, Asst. Surgeon, is relieved from further duty at Madison Bks., New York, and will report in person to the commanding officer, Ft. Wadsworth, New York, for duty at that station, relieving Capt. Charles K. Winne, Surgeon. Capt. Winne, upon being thus relieved, will proceed to Ft. Snelling, Minn., and report in person to the commanding officer thereof, for duty at that post. Par. 2, S. O. 119, A. G. O., May 21, 1890.

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ADDRESSES.

THE RESPONSIBILITY OF DIPSOMANIACS.

Read in the Section on Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY THOMAS B. EVANS, M.D.,

OF BALTIMORE, MD.

CHAIRMAN OF SECTION ON MEDICAL JURISPRUDENCE.

In the present period, when the attention of the whole civilized world is being directed to a consideration of the ravages that follow the improper use of alcoholic beverages; when legislators, National, State and municipal in our own country are deliberating upon the enactment of laws for curtailing their use; when Judges of law are departing from old and well recognized decisions as to the responsibility of the victims of its abuse, it is right and proper that from this medical centre, there should go forth some expression of our conclusions, based upon the facts that support and sustain the faith that within us rests.

It is hardly necessary to attempt a portrayal of the consequences that follow the inordinate use of alcohol; it is written in letters of living light all over the history of the world. The almshouse, the penitentiary, the jail, the insane asylum, the desolate fireside—all, in solemn acclaim, and with one accord, attest that of all evils, it is the most potent. Far-reaching in its influence, debasing in its effects, withering in its blight. Beneath its subtle spell truth lies prostrate, honor dethroned, love extinguished, joy dispelled, and crime exalted. It is somewhat singular that long ago the question "of how to chain this great evil," has not been definitely determined. Great evils of far less importance have had around them thrown the restraining influence of the law, and the effect has been a great advance, in lifting up the lowly and bettering the condition of the human race. But King Alcohol has reigned supreme, his realm has not been invaded, his subjects are loyal and true, and so mighty in power, that no opposing force has been able to hold the field against them. In this day of free thought, with brain and mind unfettered, surely there will come some means to stay the progress of this great and burning shame that is now threatening our National life, undermining the foundations of law and order, and stamping upon mankind the curse of its impress. It is a question that appeals to every lover of his race, to every lover of home and fireside; its bloated front may enter your family circle; its bleared eye, distorted and wild, may be seen in the person of a loved son or a doted daughter, and it may be that they are not responsible beings, that heredity placed upon them a seal whose lines were engraved by their progenitors. Although legislation is necessary to restrain men from its abuse, and should be consummated, yet such action is environed with difficulties. As a rule men do not like prohibitory laws, and oppose them often upon principle alone, without regard to the good that may be accomplished. Therefore, the people must be educated up to the standard of a higher law, that will teach them the dangers that beset and are sure to follow the use of alcohol in any form. There is no class of men that can do this with as much force and emphasis, and command the respect and attention of the community as the physician. It is our duty as physicians to teach the public how to subdue an epidemic, but better far, to teach them how to prevent it. Preventive medicine is the brightest gem in the diadem of science, for there is more glory in arresting disease at the fountain-head, than to endeavor to dam the current, swollen by a thousand tributaries. It is our duty as physicians, by concerted action, to hold aloft the banner of science, and with fervent zeal impress upon the mind of the world the fact that alcohol is a poison, a drug, that stamps upon the nerve centres impressions that appear in the brain of the offspring; a pestilential spirit whose bated breath is laden with germs of weird and mystic power, that make their nidus within the brain, grow, expand and multiply, filling its tortuous and winding halls with their progeny, subduing its energies, paralyzing its functions, dethroning reason, and transforming God's best and noblest work into a foaming, raging demon.

It has been demonstrated satisfactorily to every unbiased mind that alcohol has an elective affinity for water, greater than for any of the tissues of the body.[1] Upon the dead tissue it causes con-

[1] Dr. T. Rogers, New York Medico-Legal Society.

traction and shrinking of its substance by the absorption of water contained therein. That this same process takes place upon the living tissue is shown by dropping alcohol upon the web of the frog's foot, or upon the wing of a bat. The movement of the blood in the vessels soon stops, the corpuscles congregate and contract, the calibre of the vessels diminishes, till at last all movement and vitality ceases in the part and it remains a shrunken, leathery, insensible structure, very liable to slough and disappear. This effect is more or less marked as the fluid is more or less purely alcoholic. That a similar result may take place when more or less concentrated alcohol is introduced into the cavities of the living body, may be reasonably inferred from the well-known fact that thirst follows the use of alcoholic drinks, at the same time that increased urinary discharge occurs, the alcohol displacing a more or less considerable amount of water from the tissues of the body, throwing it into the circulating blood, whence it passes off by the kidneys. It therefore appears that both in the living and dead tissues of the animal body the affinity between water and alcohol is actively manifest. An obvious corrollary would be, then, that the greater amount of water any animal tissue may contain, the more marked will be the action of alcohol upon it. Now, of all the structures of the human body the brain is that which contains the largest per cent. of water, and, therefore, under similar circumstances it will be the organ most markedly affected by alcohol. Dr. Carpenter upon this point says, that this affinity of alcohol and water is such as will occasion the continual presence of alcohol in the blood, even in very minute proportion, to modify the nutrition of the nervous substance more than that of any other tissue; for the alcohol will seek out, as it were, the nervous matter and fasten itself upon it. In a fit of intoxication the commotion set up between the alcohol, circulating in the blood through the vessels of the brain, and the watery portion of the brain substance surrounding these vessels, which water portion constitutes about 80 per cent. of the mass of the brain, it is not difficult to comprehend how a permanent alteration of nerve structure may result from repeated attacks of that character.

Dr. Maudsley, in his learned work upon "The Physiology and Pathology of the Mind," says the influence of alcohol upon the mental functions furnishes the simplest instance in illustration of the action of a foreign matter introduced into the blood from without. Here, where each phase of an artificially produced insanity is passed through successively in a brief space of time, we have the abstract and brief chronicle of the history of insanity, because the action of the poison upon the nutrition of the nervous centres is quick and transitory; but we have only to spread the poisonous action over years, as the drunkard does, and we get a chronic and enduring insanity.

Nasse says the physical disturbances which result from the abuse of alcohol are numerous. Besides the digestive apparatus and the blood and brain, the blood vessels gradually degenerate, and there is hardly an organ of the body which does not undergo pathological changes in consequence of the impaired general nutrition, and every habitual drinker arrives finally at a state of mental disease founded on tangible changes in the functions of the brain, and characterized by dulness of the senses, the judgment and memory, by weakness of the will and loss of the faculty of self-control. Whether he has arrived at this point by way of a vicious habit or under injurious influences in consequence of an abnormal organization, the result of continued drinking is the same. We have a morally depraved, mentally and physically sick individual on our hands.

Prof. Greismeyer says that every degree of drunkenness represents a grade of real insanity, being a dreamy condition, with many illusions and hallucinations. The habitual drinker exhibits, even when not drunk, many signs of chronic brain trouble, and his condition may gradually merge into insanity. In the brain of the habitual drinker, as in that of many insane, may be found the results of passive stasis, of chronically formed opacities and thickening of the membranes. The habit of drinking is so strong, and the representatives against it in the drinker so feeble, and his will to abstain so weakened, that though fully conscious of becoming dishonored and despicable, though his health is failing and his domestic happiness going to ruin, yet every day anew he will break his good resolutions.

Dr. Taylor says that pathological investigation shows the brain is changed from a healthy to a diseased state by the action of alcohol. Healthy thoughts and healthy moral sentiments are not evolved by a diseased brain. To its possessor we attach no moral responsibility. An inebriate has a diseased brain; no will or agency of his own can bring forth therefrom other than diseased mental and moral products. A person who is governed by an uncontrollable appetite, or by an uncontrollable influence, is not a responsible being.

Dr. Hutchinson states that a confirmed inebriate is an insane man, dangerous to himself and others, and however responsible he may have been for bringing the disease on himself, his responsibility ceases as soon as he comes under its influence.

Numerous authorities might be quoted other than those mentioned, all showing the drift of medical conclusions as to the effect of alcohol upon the brain and the responsibility of dipsomaniacs. I do not know that there is any fact in medicine so clearly shown by reason, observation and experience: that the dipsomaniac is an irre-

sponsible being, a diseased, stricken individual with a crooked brain, in which reason and self-control have no abiding place. For him there is no sunshine; the silver sea of dawn and evening's cloud of molten gold, the solemn splendors of the night, and all the voices of the sea, wake not his soul to gladness. There is but one thought, one desire, that wanders through his brain, born of an insatiable, uncontrollable thirst for alcohol, and for it he sacrifices all that is dear to the human heart, the ties of love, the prattle of children, the sacredness of home, priceless honor. To say that one is insane is enough to command the sympathy and commiseration of every true man, and when insanity has been diagnosed beyond a doubt the law does not hold the individual responsible for any of his acts. Therefore, if it is fairly proven that dipsomania is a disease of the brain, that it is a form of insanity, and that the dipsomaniac is an insane person, why should he be held responsible for his acts and deeds, while the insane from other causes are held to be irresponsible? The effect is the same, although the causation may be different, and there is no justice in differentiating their relationship to responsibility and irresponsibility. Insanity is insanity, no matter what the cause.

As early as the time of Chief Justice Coke, it was formulated that for criminal acts done in the condition of drunkenness, the person was doubly guilty, for inebriety always aggravated the offence, and that the penalty should be increased rather than diminished. This view has been accepted by legal minds, as being just, and eminently conservative of social and proprietary rights. A recent judicial charge might be quoted to show that there has been very little improvement upon the legal dictum of Chief Justice Coke, in regard to the plea of irresponsibility. Our efficient and well qualified secretary, Dr. Crothers, testified in the case with his usual clearness and perspicuity, that the prisoner was insane, and not responsible. The Judge said: "No insanity or irresponsibility can be predicated in any given case, unless the mind showed a continuance of delirium or delusion. And that in no case should this be taken into account or mitigation of guilt, if it resulted from alcoholic intoxication." This decision is based on the old English law, that intoxication is never an excuse for crime, and that no man can plead that he should be exempt from the law by reason of not knowing or not being able to control the extent and force of his acts, by reason of being drunk, and that drunkenness is a voluntary insanity, and those who use alcohol to that degree know full well the consequences of that act. A decision of that character is unjust. It belongs to the dark ages. It is born of ignorance, and is opposed to the principles of pathology and common sense. The fact is patent, that judges are generally ignorant of the physical laws that govern and control insanity; seeing that by long experience and devoted study only, is a profound knowledge to be acquired, it is not to be wondered that they so often fail to administer the law justly. But not only are judges incompetent in many instances; the average juror is still more. How is it possible for twelve men drawn from the masses to be equipped, and qualified to decide the delicate and complicated question of a prisoner's mental condition. Again, the medical profession, unless they have had special training, are likewise incompetent. There may be some cases of insanity so well marked, that it would be comparatively an easy matter to decide the question. But the majority of cases require the specialist, who has made a study of insanity in all its varied forms. He must be a physician and something more.

A great deal of the confusion that prevails in the profession, is owing to the fact, that every man thinks he knows as much about insanity as he knows about common continued fever. The grave and complicated questions, that enter into the consideration of each and every case, the predisposing and exciting causes, its occasional sudden accession, its intermissions and remissions, its varied phases of depression, excitement, or violence, its premonitory symptoms, its different symptoms, and probable termination; can only be determined by the trained medical mind. It is not a question for judge or juror to decide, without the aid of competent, scientific, unbiased evidence. There is a radical reform necessary of the law, in regard to medical jurisprudence. It is high time, that some advance should be made in that direction, and that we had closed the musty tomes of the past filled with judicial errors, acts of grevious injustice, and opened a better volume; a warmer, brighter record of law, wherein humanity can find a plea, science a place of honor, and dipsomania justice. Already some judicial minds are moving in that direction, the dawn of a new era is begining to rise; and all the horizon around is invested with bright rays. In England and elsewhere some eminent jurists have decided "that a man may be convicted of an offence committed in drink, and yet be absolved from responsibility." For example, as reported in *The Lancet*, Baron Pollock has held that a plea of irresponsibility was tenable in a case where a homicide was committed by a person after taking a small quantity of alcoholic liquor, a quantity not sufficient ordinarily to disturb the reasoning faculties, but which, in the case in question, was sufficient to set in motion an insane predisposition that became the prime agent in the manslaughter. Another eminent judge in England has recently ruled, in regard to the case of a drunken mother, who, through the neglect of her babe, occasioned its death by starvation; the withholding of nourishment by the mother was

not a crime for the reason that it was undesigned, and that it is not a declared crime to imbibe too much liquor.

Chief Baron Pallos has recently ruled, that neither law or common sense can hold a man responsible for the acts done under the influence of an intoxicant, if by reason of long vigil, deprivation of sleep or impoverishment of the blood, he shall have become so reduced as to be made drunken with a smaller quantity of liquor than would have produced that effect upon him in good health. Justice Day has gone still further, and has delared "that a person who does not know the nature and quality of the acts he commits, is not responsible for them whatever may be the cause of his unconsciousness. These decisions have about them the true ring, and is a complete reversal of the decisions, that have ruled the courts of the world for three centuries. They are in harmony with the teachiugs of science, in accordance with all authorities upon insanity, and apace with the advance and general improvement made in all branches of medical knowledge since the day of Lord Coke.

It becomes the duty of every physician to promulgate the facts as laid down by these eminent jurists; and to support and sustain the principles involved therein upon all occasions. There must be no conflict in the future, as there has been in the past, between law and medicine. We must always insist that dipsomania is a physical corporeal disease in common with all forms of insanity, and must be diagnosed by competent medical authority. The right interpretation of its symptoms belonging alone to the realm of medicine. Then alone will justice beam with all the brightness and purity of unsullied truth; humanity glow with the splendor of righted wrongs, and the Genius of Medicine, unshackled and free, side by side will stand with the Genius of Law, clothed with all the majesty of might and power, to elicit truth, to administer justice, to those bereft of reason, by that demon Alcohol.

GENERAL MEDICATION IN THE TREATMENT OF SKIN DISEASES.—DR. A. H. OHMANN-DUMESNIL, in the St. Louis *Clinique*, January, 1890, says that general medication is frequently of more importance in the treatment of skin diseases than local measures, and he cites an example of a strumous child of 8 years suffering from eczema and tinea tarsi who was cured by the internal administration of cod liver oil. We cannot let this opportunity pass without expressing our gratification at thus seeing a specialist for the skin advocating general treatment. With the exception of parasitic diseases, there are no diseases of the skin in which local treatment is absolutely necessary, while even in many parasitic diseases constitutional treatment is very beneficial.—*Canada Medical Record.*

ORIGINAL ARTICLES.

A NEW MOUTH GAG. TOGETHER WITH THE CONSIDERATION OF OTHER POSSIBLE AIDS TO BETTER RESULTS FROM INTUBATION OF THE LARYNX.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CHARLES DENISON, A.M., M.D.,
OF DENVER, COL.

Your indulgence is needed for the crudeness of this paper and the immature thoughts I have to offer, for one of the instruments I have to present was only finished the day I left Denver on my way here, and the description and argument have necessarily found expression since that time.

However, if a strong belief, backed by a peculiar and varied experience, that intubation of the larynx is a better operation than results up to now have proved it to be; in other words, that the ratio of recoveries by that operation is susceptible of much improvement—if this is any excuse for my burdening you, then I shall not despair of your concurring approbation or your opposing criticism. If you feel as I do about it, you will welcome any agitation of this subject that will give promise of some realization of the above expressed belief.

For purposes of reference and comparison I herewith append a table of all the intubation cases I have had up to the first of this month, namely: twenty-five, in which there were seven recoveries, counting as a recovery one case which died of paralysis or failure of the heart five days after the tube had done its full work and has been removed.

Of course I desire some allowance to be made for the exceedingly unfavorable character of these cases, just as every operator does who is called in to perform intubation as a *dernier ressort* after the attending physician has vomited, blistered, and "given up" the little patient. A previously existing pneumonia, so that a whole lung is solidified, as was the case with two of the list, is also calculated to impress the operator with the belief that he could have a better record if he would refuse to intubate some cases, which I have in no case done.

It is further to be remarked, as will be more apparent further on, that the atmospheric conditions under which these operations were performed, together with a marked tendency to catarrhal broncho-pneumonia in cold weather at and above 5,000 feet elevation, must have an important bearing upon these records.

A PROPER GAG.

My experience with the gag accompanying the first sets sold of O'Dwyer's tubes, convinced me

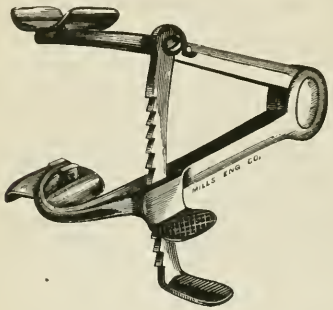
that a better means of getting and holding open settled the question for me, and I devised a simple the patient's jaws must be devised. The long ple two-armed gag separated by a ratchet conhandles being hit by the child's shoulder or some trolled by the thumb and forefinger, which has other part, thus disengaging the instrument, served very well in many subsequent intubations. gether with a bitten and poisoned index finger, The troughs or supports for the jaws or teeth

TABLE OF CASES OF INTUBATION.

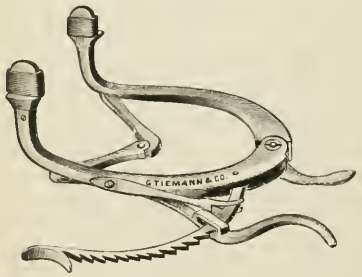
No.	Date.	Initials of parents or of patients.	Whose patient previously.	Age and Sex.	Duration before Intubation. Croup, Laryngeal.	Duration before Intubation. Diphtheria, Pharyngeal.	Cause of Death.	Complications and Character of Disease.	Result and Remarks.
	1887.								
1	Feb. 1.	J. H. T	C. Denison	6 yrs. M.	1 day.	None		Preceded by measles, followed by broncho-pneumonia. Membranous croup.	Recovery. Tube expelled with casts.
2	Mar. 28	H A S.	Dr. J. B. Corey	14 mos. M.	7 days.	"		Measles while tube was in. Membranous croup.	Recovery. Tube taken out 3d day and immediately returned, worn 9 days and 20 hrs.
3	Mar. 30	N. A. B.	Dr. P. V. Carlin.	4 yrs. F.	4 "	1 day	Septic state and extension to bronchi.	Diphtheria	Died 16 hours after intubation.
4	Oct. 1.	E. J. D.	Dr. S. A. Fisk.	2 yrs. M.	2 "	1 day	Membrane loosened and stopped up the tube.	Diphtheria	Died. Tube in 4 hours.
5	Nov. 19	J. B. N.	Dr Walker.	6½ yrs. M.	3 "	?	Extension to bronchi.	Membran. croup. Tough membrane.	Died. 1 A.M. and 3 P.M. same day casts expelled, loosened by tube; membr. re-formed and extended to bronchi; died 36 hrs. after intubat'n.
6	Nov. 30	J. K. M.	Dr. Morris	3½ yrs. F.	3 "	1 day	Broncho-pneumonia and extension.	Diphtheria, broncho-pneumonia.	Died 10 hrs. after intubation.
7	Dec. 14.	G. F. B	Dr. Carlin	2 yrs. F.	3 "	None	Pneumonia	Membranous croup, pneumonia, 1 lung solidified.	Died 20 hrs. after intubation.
8	Dec. 30.	J. Q.	Dr. Carlin.	4 yrs. F.	2 "	1 day	Extension to bronchi.	Catarrhal pneumonia, diphtheria.	Died 44 hrs. after intubation. Intubated twice.
9	Jan. 9.	P. L.	C. Denison	18 mos. M.	2½ "	?	Broncho-pneumonia and extension to bronchi.	Membranous croup?	Died 30 hrs. after intubation. Intubated three times; tube coughed up.
10	Jan. 25.	H M H.	Dr. F.	5 yrs. F.	8 "	7 days.	Strangulation.	Diphtheria. Failed to notify the doctor for second intubation	Died. Wore tube 30 hours; died 36 hours after intubation.
11	Feb 23	L. C.	Dr Crane.	3 yrs. 1 m. F	5 "		Extension to bronchi.	Diphtheria? Dulness and moist rales. Broncho-pneumonia.	Died 40 hrs. after intubation.
12	Feb 25.	L. McG.	Dr. Edson	3 ys. 10 m. F.	2 "	2 days.	Extension downwards & catarrhal pneumonia.	Diphtheria	Died 20 hrs. after intubation.
13	May 12	R. H A.	Dr. Clough	4 yrs. 4 mos. very small for age. M.	4 "		On arrival child was strangulated.	Membranous croup. Catarrhal or "aspiration" pneumonia.	Died 12 hrs. after intubation. Intubated child lying down and apparently dead.
14	Apr. 30.	M R. Minneapolis	Drs. Morris and Nevins	6 yrs. 7 m. F.	6 "	2½ days.		Membranous croup.	Recov'd; tube in 4½ days, coughed up with the softened membrane.
15	Oct 26	A D C.	Clark and Morris	6 yrs. M.	4 "	2 days.		Diphtheria	Recovered tube in 5 days.
16	Nov. 20.	A. D.	Dr. Lattimer	5 yrs. F	3 "	1 day	Broncho-pneumonia, exhaustion and extension to bronchi.	Diphtheria and catarrhal pneumonia.	Died 12 hrs. after extraction of tube. Tube in 3½ days.
17	Dec 1.	J McH	Dr. Carlin	4 yrs. M	3 "	?	Catarrhal pneumonia.	Membranous croup?	Purulent expectoration thro' tube; tube removed and at once returned. membrane below tube; death 24 hours after intubation.
18	Dec. 13	R. H	C. Dennison	8 yrs. F.	10 hours.	10 days	Heart failure five days after removal of tube.	Diphtheria; 3 crops of membrane on pharynx	Died. Success as to the membrane extracted with tube.
19	Dec 28	Mrs. J W	Dr. Wilson	28 yrs. F.	½ hour	1½ days.	Sepsis and exhaustion five days after confinement Her two children had diphtheria at the time	Diphtheria	Tube in 25 minutes and then coughed up with cast following; died 32 hrs. afterward.
20	Dec. 26.	L. M.	Dr. L. E. Lemen	27 mos. M	2 hours	?		Membranous croup	Recov'd. Tube removed Dec. 28 and 30 and Jan. 1, and returned immediately; tube worn 8 days 7 hours.
	1888.								
21	Jan 9.	F. E. W	Dr. Davis	13½ mos. F	3 "	7 days.	Diphtheritic bronchitis.		Died 36 hrs. after intubation.
22	Jan. 11.	J J. McD	Dr Davis	17 mos. M	4 "	No membrane seen		Had measles with tube in. Diphtheria.	Recovered. Membrane came up with tube; intubated twice afterward, tube worn 7 days and 10 hours.
23	Jan. 16.	B F. A.	Dr. H.	3 ys. 10 m. F.	3 "		Purulent bronchitis.	Broncho-pneumonia	Died 68 hrs. after intubation; tube worn all the time; taken out once for cleansing.
24	Mar. 24	M. W. D.	Dr. Kimball	3 yrs. 6 m. M	24 "	3 days.	Extension of membrane to bronchi.	Diphtheria; several crops.	Tube removed twice in 2 and 3 days, died with tube in 4 days and 1 hour.
25	Mar. 30	P M	Dr. Bliekensderfer	3 yrs. 3 m. F.	36 "	7 days.	Septic and catarrhal bronchitis.	Suppressed scarlet fever.	Tube in 29 hours; died 12th day from first attack suppressed scar fever

Under four years of age, 13, with three recoveries; four years of over, 12 cases and four recoveries. Average time tube worn in successful cases, 4¼ days.

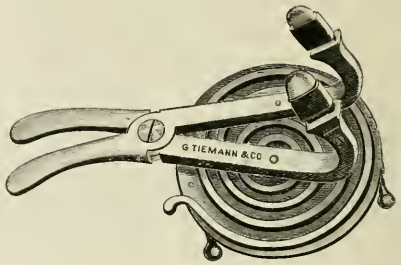
were made slightly swivel, so as to fit the angle of the jaws of any aged child—a new device of my own so far as I am aware. The requirements



of a perfect mouth-distender seem to me to be, 1, that it should be possible for the assistant to hold it in place without any fear of its being disengaged during the operation; 2, that it should fit any aged child and not injure the gums of toothless children; and 3, that it should be strong enough and easily managed though the patient resist. This is no easy task to accomplish, for the strength of a five or six year old boy's jaws is something not to be sneered at. The new instrument here presented, lately made for me by Tiemann & Co., would answer all requirements if it gave a little more power to distend the opposing jaws. It has or gives a wide sweep of a lever which works on a toggle joint and thus distends the arms upon the ends of which are the swivel jaw troughs. These troughs should be bent back at less than a right angle to the side arms so they will point inwards and backwards, and thus engage the jaws not quite as far forwards as the incisor teeth.



The third and last invention here presented is likely to be the best gag, because it answers all the requirements of a perfect instrument. With it the jaws of the most rebellious youth can be worried open and held so by the aid of a competent assistant who can hold still the patient's head. The power by which the jaws are distended by this instrument depends upon the sliding of a pivot attached to one arm in three elliptic grooves made on a circular plate, the centre of which is pivoted to the other arm of the gag. The wedge-shaped teeth troughs first, I believe, recommended by Dr. , of New York, are used on this instrument to favor an entrance between the closed teeth. The gag is to be held by the assistant firmly against the left cheek of the patient when in use.



THE PREVENTION OF "ASPIRATION" PNEUMONIA.

This "aspiration pneumonia," as Dr. O'Dwyer calls it, in correspondence I have had with him, is to my mind, a very important consideration. I would call it an *œdema* of the air cells, though undoubtedly the records of deaths from bronchopneumonia, catarrhal pneumonia, catarrhal bronchitis and "extension to bronchi" often refer to a similar cause.

In my fourteenth case (see table) I made what I believe was a very important discovery, which was decidly confirmed in one other case of recovery—the twenty-second in the table.

This little girl, in April, 1888, was taken with membranous croup while on her way from California to her home in Minneapolis. The tube was worn four days and then coughed out with the softened membrane. This was a good case and no one could doubt the agency of the operation in saving the child's life. I was induced to intubate earlier than usual (pulse 96, respirations 32 or less and temperature about 100° F.), by noting that there was a very perceptible *weakening of the tension of the pulse during inspiration* compared with the tension during expiration. This is the point. Aspiration was undoubtedly already commencing, which, to my way of thinking, has evidently rendered fatal otherwise very favorable cases. Of course it is difficult and sometimes impossible to determine this condition in rapidly breathing children, with hearts beating away at the rate of 130 to 170 a minute. If we could have sphygmographic or other methods

(aside from the tactile sense) of determining the commencing rarefaction of the air in the lungs, I believe we would possess a guide to much better success from intubation. You will, I think, acknowledge that we are to expect a greater liability to this aspiration pneumonia with the air pressure at 12 lbs. to the square inch (as in Denver) than as you have it at sea level. If the difference in air pressure noted as existing in the lungs during inspiration and expiration amounts to anything, it means that the necessity of supplying oxygen to the blood must be accompanied by an increase of such difference in rarefied atmospheres. That there is such difference there is not only no doubt in my own mind, but it is in perfect accord with the fearful mortality after intubation, through this so-called aspiration pneumonia. All of which points to the danger of delay in operating for membranous croup or any laryngeal stenosis. Let us try to learn something from the record of deaths after intubation. In my own list of eighteen cases of death fourteen were evidently complicated with pneumonia and bronchitis, either diphtheritic or catarrhal, which in several instances seemed to develop about a day after the first operation. For instance, excluding cases where the cause of death was otherwise apparent, or the extension of diphtheritic or croupous membrane was known to have occurred down in the bronchi, and we have nine cases in which death occurred on an average of twenty-six hours after intubation. What was it that occurred in these cases? As I have before intimated, the higher the altitude and the more serious the strangulation (and none could be worse than some of those nine), the more apt are we to get these subsequent lung complications. For instance in case 13 of my list, as I was commencing to operate the child gasped and was evidently dead. I therefore asked Dr. Clough to put him back on the bed. Then I thought I would intubate any way, which I did, as the child was on his back, without using any gag, for the child's jaws were perfectly limp. Then by using artificial respiration the boy was brought back to consciousness in half an hour, so that he sat up and drank a glass of warm milk. Yet, as I predicted at the time, he was a dead child in twelve hours. The subsequent filling up of the lungs was undoubtedly due to the aspiration which had occurred at the time of the strangulation mentioned. One of Dr. A. Caillé's cases must have been very similar. He says, "I believe that I would be able to report at least one more recovery if intubation had been done earlier in one case, for breathing had actually ceased and artificial respiration had to be practiced."[1] In my own list I have seen no case recover which even approximated the above condition in seriousness, unless it was the first. But this was in a splendidly developed boy 6 years old, and age seems to make considerable difference with reference to the liability to this accident of aspiration or œdema in the lung periphery.

Now taking the published records of other operators, such of them as happen to be on hand, and we have evidence enough that there is a very considerable mortality after intubation which is not satisfactorily explained, except upon some such supposition as is here advanced.

Dr. Dillon Brown's record of his first 200 cases gives 54 recoveries, and in 88 out of the 146 fatal cases there was either extension to bronchi or pneumonia.[2]

Dr. J. Mount Bleyer's list of 206 cases gives 67 recoveries, and in 106 of the 139 fatal cases there was either broncho-pneumonia, pneumonia, bronchitis, or extension to bronchi.[3]

Dr. W. P. Northrup, in his "Pathological Anatomy of the Respiratory Tract After Death from Laryngeal Diphtheria and Intubation," found that of 87 post mortems made, "in 54 cases there was pneumonia, the diagnosis of which was made either from obvious signs of consolidation, or, when this was not well developed, from the microscopic findings."

In a list of cases presented to the New York Academy of Medicine, June 2, 1887, by Dr. Dillon Brown, made up from the records of many operators, including Dr. Joseph O'Dwyer's, his own, Dr. Huber's, Dr. Waxham's, Dr. Northrup's and others, the causes of death in 339 cases were analyzed. Of these, 212 were put down as diphtheritic bronchitis, pneumonia, pulmonary œdema and bronchitis.

Now here are samples of records which show that from 60 to 70 per cent. of deaths after intubation resulted from these lung complications. The questions naturally arise, what proportion of these complications are due to aspiration, directly or indirectly? and are there other unexplained conditions which contribute to this mortality? As for my own belief I cannot accept *as conclusive* the simple dictum that a diphtheritic membrane had extended into the bronchi in anywhere near the proportion of cases so stated. It is natural, perhaps, for operators to put the worst construction on those cases which were fatal. An exact description of the lung condition is not stated, and the damage which had occurred before they had intubated is of course not eliminated.

Turn the subject over as we will, we are compelled to return to a remarkable death-rate in a throat disease due to secondary lung complications, which have not yet been clearly explained. Let us admit, for the sake of argument, what seems entirely reasonable, namely, that the dan-

[1] Contribution to the discussion on Intubation of the Larynx.

[2] "Intubation of the Larynx in Diphtheritic Croup," reprint New York Medical Journal, March 9, 1889.
As to ratios and character of cases my own list tallies very closely with Dr. Brown's interesting analyses of his own cases.

[3] Journal of the Respiratory Organs for April, 1889.

ger in an intubated case of diphtheritic laryngitis is equivalent to that of three separate serious conditions, *i. e.*: First, the diphtheria, or septic state; second, the danger of, or actual existence of, aspiration pneumonia, an assumption which is warranted from the simple fact or reason of an intubation performed; third, the presence of the tube in the larynx, exclusive of the strangulation it has averted. The shock to the patient, injury to parts, or prevention of respiration in operating, enter as aggravators of all these dangers under varying conditions, but especially the last.

Considering these three dangers separately, the ratio of deaths due to lung complications is way out of all reasonable proportions due to such a septic state. I am aware that Dr. Dillon Brown, in his paper read before the New York Academy of Medicine, "Dangers and Accidents of Intubation," says "that the cause of death when due to pulmonary complications is, in the vast majority of cases, not pneumonia, but an extension of the disease to the bronchi—a diphtheritic bronchitis." Mark, however, that he does not recognize any other cause existing for pneumonia or pulmonary œdema in the excuse given for his conclusion, which is at least an insufficient basis upon which to establish the presence of "a diphtheritic bronchitis." He continues: "Pneumonia is not a common complication of diphtheria when the larynx is not involved, although the same condition exists; the inspired air is septic." The comparative freedom from lung complications in cases where there has been no dyspnœa settles this question, and we must look further for the great amount of lung and bronchial disease.

2. To my mind the second danger—this question of aspiration—more than any other explains the situation. The delicate air cells, with their extended area taken as a whole, furnish a tractive force upon the pulmonary circulation. When this laryngeal obstruction commences, that overdistends and perhaps paralyzes the walls of the capillaries which surround them. This œdema may then go on to a pulmonary engorgement or congestion, on the one hand, or through transfusion of the liquor sanguinis into a catarrhal bronchitis, on the other hand; or a combination of the two in a broncho-pneumonia might naturally result. This crude explanation of what I would style the major process is advanced for what it is worth, but it is certainly more satisfactory to me than the assumption of the extension downwards of a diphtheritic membrane, which, however, in a small proportion of cases evidently does occur.

The third danger named—the tube in the larynx—is a difficult problem to solve, and it is not to be lightly considered until we can fairly eliminate the results of substituting an inflexible metal tube for the delicately organized human larynx. I am aware that Dr. O'Dwyer says: "Intubation in chronic stenosis of the larynx in the adult is not followed by any inflammatory changes in the lungs." Yet the dangers to be feared must be noted as pertaining particularly to childhood, and that, too, in inverse ratio to the age. Besides, the same author states as an etiological fact: "*The presence of the tube*, whether it be in the larynx or in the trachea, not because it may admit a little of the milk or other fluids swallowed, but because it prevents closure of the glottis, and consequently prevents that compression of the air which is essential in order to give full expulsive power to the cough. The irritating secretions, therefore, instead of being promptly expectorated, accumulate and are aspirated into the air cells, where they sooner or later excite inflammatory changes."[4] This is both lucid and, coming from the source it does, authoritative.

It seems to me that the lack of any restraint to the outward expulsion of air in the act of coughing might result in such an exhaustion of the air in the lungs, that when the quick rallying due to expansion followed, a suction on the interior alveolar walls might result, threatening or causing atelectasis. In harmony with this idea it has occurred to me best to control the cough by anodynes, and the result thus far, excluding the increased liability of clogging up the tube, has always been salutary.

The only further possible influence to mention is to put a question which suggested itself to me while reading Dr. F. H. Hooper's article on "The Respiratory Function of the Human Larynx."[5] Is it possible to let too much air into the delicate lungs of a child? or does this practical abolition of the larynx unduly disturb or destroy the mechanism of respiration?

It may be claimed, especially by my friend Ingals,[6] that a considerable proportion of pneumonic complications arise from fluids entering the tube in feeding. I do not wish to underrate this possibility; at the same time I have to remember that five successful cases in my own list lived almost wholly on fluids, and averaged seven days each with the tube in. I also note that in the 206 cases of Dr. Bleyer, with the excellent result of 33 per cent. recoveries, "feeding is done in the recumbent position through a nursing bottle." It further occurs to me to suggest that perhaps the excellent method of treatment practiced by Dr. Ingals—the hydragogue effect of the calomel, together with the total restriction of fluids, except ice—may account for the absence of bronchial catarrh in his later cases, more than the freedom from fluids entering the tube.[7]

[4] "Feeding After Intubation of the Larynx," by Jos. O'Dwyer, M.D. Read June 2, 1887, before the New York Academy of Medicine.

[5] New York Medical Journal, July 4, 1885.

[6] "Intubation of the Larynx," New York Medical Journal, July 2 and 9, 1887.

[7] Before intubation has been necessary in cases of threatened croup I have hit upon the idea of promoting secretion in the pharyngeal and neighboring glands, besides keeping the parts con-

It is unnecessary for me to attempt to show that better results would follow the definite solution of the problems here propounded. If aspiration, as I believe, is accountable for a large proportion of these pulmonary complications, then not only is a much earlier intubation necessary, but further counteractive measures may perhaps prove of great benefit, such as, for instance, compelling the patient, after intubation, to inhale compressed and breathe out into rarefied air, which would be the opposite of the cause of his danger.

However, my paper has already been too long extended, and I close by expressing the hope that I have presented, though ever so poorly, something that will stimulate some of you to clear up this very difficult problem and make this lately introduced but wonderful operation of intubation of the larynx a still greater boon to the afflicted.

Dr. E. Fletcher Ingals, of Chicago, was interested in the inventions of the author of the paper. He had been bitten because of the use of an imperfect gag, and, therefore, was peculiarly interested in any instrument that would prevent such an accident. He had for two years used Goodwillie's gag, but recently had used a very simple and effective instrument devised by Dr. Henrotin, of Chicago. The gag, which he showed to the Section, would be found to enable the operator to dispense with one assistant, and could not be displaced by the patient. He had used it frequently in operations in the naso-pharynx and liked it very much, because of the ease of insertion and the certainty that it could be easily retained by an assistant. He had never seen, and never expected to see, a patient, excepting one affected by lock-jaw, in which there was any difficulty in opening the mouth if a thin, flat tongue depressor or a spoon handle was slipped behind the edge of the upper teeth and worked gently but steadily back along the roof of the mouth until the patient gags. He stated that pneumonia from aspiration of food was commonly feared, but there seemed to be no post mortem evidence that it ever occurred. He formerly withheld fluid from little patients wearing the laryngeal tube, and, he believed, with benefit to the disease, though the treatment was not popular on account of the piteous pleading of the child for water during the first forty-eight hours. Since the adoption of the method of giving fluids with the mouth lower than the trachea he had given fluids as much as desired by the patient, without fear of its passing into the trachea. It was not necessary to place the child's head 45° below the horizontal line, but merely to have the head below the trachea. Sometimes the child swallowed best when on its face, sometimes when on its back or side. A common way was to allow the patient, when taking fluid, to lie on the nurse's lap, with the head hanging backward.

Note.—The publication of the foregoing paper and discussion has been delayed owing to the loss of one of the wood cuts.—Ed.

stantly cleansed from deposit, by allowing the affected youngsters to practice the unseemly, but to them agreeable occupation of chewing gum. In two cases this seemed to be an effectual preventive, in one of which half a cup of fibrin, mucus and saliva, which had been washed over into the stomach, was vomited. Maybe we may yet combine our germicides with this congenial and simple occupation for children, and thus in a measure prevent the diphtheritic deposit. I mention it as a new field for experimentation.

REPORT ON THE METEOROLOGICAL CONDITIONS AND THEIR RELATIONS TO THE EPIDEMIC INFLUENZA, AND SOME OTHER DISEASES IN CHICAGO DURING THE SIX MONTHS ENDING MARCH 31, 1890.

Read in the Section of State Medicine of the American Medical Association, May 20, 1890.

BY N. S. DAVIS, M.D., LL.D.,
OF CHICAGO.

Early in the last quarter of the year 1889, epidemic influenza or la grippe was reported as prevailing in Russia or northern Europe, and before the end of the quarter it was prevailing to some extent in almost every country in Europe, and in many parts of our own country. This shows a rapidity of diffusion equaled perhaps only by the epidemic of 1847, which is represented to have invaded the whole of Europe within the period of six weeks. On the other hand, the epidemic of 1831–3 was six months in reaching the same degree of diffusion. The first cases of the recent epidemic recognized in Chicago appeared during the last week of December, 1889, when one death from the disease was reported to the health office. During the following month, January, 1890, the number of fatal cases reported was sixty-four; in February, thirty-seven; and in March, seven. The disease thus reached its climax during the first three weeks of its prevalence, and had really ceased in six weeks more. The coincident prevalence and fatality of acute diseases of the respiratory organs, typhoid fever, and of the mucous membranes of the digestive organs, will be seen by the following comparison of the deaths in Chicago during the six months ending March 31, 1890, with those of the six months ending March 31, 1889. To make the comparison fair I have not included the death returns from the ten new wards annexed to the city since March 31, 1889.

The following table shows the number of deaths in the old twenty-four wards of the city of Chicago from the several diseases named during the six months ending March 31, 1889, and 1890 respectively:

	1888.			1889.			
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total.
Bronchitis	43	32	95	115	90	84	459
Pneumonia	69	62	114	128	111	145	629
Influenza	.	.	.	.	.	.	
Typhoid fever	46	40	43	30	21	15	195
Cholera infantum	20	10	3	2	1	2	38
Diarrhœa	10	3	1	3	2	5	24
Dysentery	17	6	1	.	.	1	25—1,370

	1889.			1890.			
Bronchitis	47	49	84	186	118	130	614
Pneumonia	74	86	134	414	236	226	1170
Influenza	.	.	1	64	37	7	109
Typhoid fever	55	55	28	42	109	82	371
Cholera infantum	35	11	5	13	18	3	85
Diarrhœa	10	10	4	11	15	12	62
Dysentery	21	12	11	18	27	10	99—2510

In examining the details in these tables, it will be seen that the appearance of the epidemic influenza in the latter part of December, 1889, was accompanied and preceded by a moderate increase in the number of deaths from pneumonia, cholera morbus of infants, diarrhœa and dysentery, while its progress through January, February and March, 1890, was accompanied by so rapid an increase in the prevalence of those diseases and in typhoid fever, as to more than double their mortality as compared with that of the corresponding months of the preceding year. Indeed, during the month of January, 1890, when the influenza was at its climax, the deaths from pneumonia were more than three times as numerous as during the same month of 1889, and the intestinal affections were more than six times as numerous. The figures show a marked increase in the number of deaths from bronchitis, though in much less ratio than from pneumonia, while the ratio of deaths from typhoid fever was only moderately increased during the climax of the influenza epidemic, but was greatly increased during the decline through February and March. In fact the cause or causes giving rise to the epidemic influenza appeared to so influence the human system as to lessen its resistance to the action of morbific causes generally, and hence there was an increase in the prevalence and fatality in nearly all forms of acute disease whether general or local. The cases diagnosticated as influenza by the profession presented a great variety of symptoms. The only symptoms that could be regarded as uniformly present in any stage of the disease, were rigors followed by some fever; severe pains in the head, back and limbs; and decided sense of weakness at the commencement of the attacks; and even these varied much in their intensity in different cases. In not more than one-third of the cases was there decided congestion of the mucous membrane of the air passages causing coryza, sneezing, discharge from the nostrils, and bronchial cough characteristic of typical influenza. In quite as large a proportion of the cases, the air passages remained free from irritation, but nausea and sometimes vomiting and diarrhœa with abdominal pains were present from the beginning. The remaining cases amounting to 25 or 30 per cent. of the whole presented only chills followed by two or three days of pyrexia, severe pains, and decided muscular weakness with loss of appetite. Many of these, however, continued to complain of weakness and soreness of the muscles, and frequent shifting neuralgic or rheumatic pains for several weeks. It was chiefly in the first group of cases that pneumonia was met with as a serious complication or as a sequel; while cases in the second group were more frequently followed by typhoid fever, or a persistent intestinal catarrh.

Etiological Considerations.—The nearly simultaneous appearance of the recent epidemic over large districts of country, and its sudden attack of many individuals in a community on the same day, belonging to different classes of society and having had no personal contact with each other or with any previous cases of the disease, renders it impossible to explain its origin and spread from contagion and personal intercourse. When a disease thus suddenly attacks its victims in various parts of a city during the same twenty-four or forty-eight hours, the victims being limited to no one class, age or sex, we are compelled to look for the efficient cause or causes in some vehicle or agency to which all are exposed. Only two such vehicles are known to exist in Chicago, viz.: the atmosphere and water. The whole population, rich and poor alike, receive their supply of the latter from lake Michigan through the tunnels and pumping works.

Since the enlargement of the Illinois and Michigan canal connecting the Chicago river with the Desplaines by which, with the aid of pumping works, the sewage of the city is during the greater part of each year, prevented from flowing into the lake; the water supplied to the inhabitants is of good quality except for a limited time after the usual spring and autumn freshets, during which the current in the river resumes its natural course and sweeps a large amount of accumulated deposits into the lake. On these occasions the contamination of the water of the lake often extends far enough to reach the inlet of the tunnel and is brought back through the hydrants for every family's use. Usually these periods have been of brief duration. But owing to the inadequency of the pumps connecting the river with the canal or their inefficient management, a much larger amount of river water and sewage was allowed to flow into the lake than usual during all the months of December, January, February, and March. This was proved by repeated examinations of the water taken from the hydrants in different parts of the city by competent chemists and microscopists. Professor J. H. Long, of the Chicago Medical College Laboratory, who has made frequent examinations

of the city water supply for seven or eight years past, states that the hydrant water usually yields from .005 to .010 free ammonia per million parts of water, and from .060 to .090 parts of albuminoid ammonia when in average good condition. But his examinations showed that the water during January and the first part of February, 1890, contained from .200 to .255 parts of free ammonia per million parts of water, and from .136 to .183 of albuminoid ammonia. During the latter part of February the pumps lifting the water from the river into the canal and carrying it from the lake, were repaired and made to do much more efficient work. In consequence of this the several analyses made by Professor Long from March 6 to the 22d, showed free ammonia varying from only .009 to .016, and of albuminoid ammonia from only .072 to .096 parts in the million.

Drs. Robert Wahl and Nevins commenced repeated microscopic examinations of the hydrant water from different parts of the city during the latter part of January, 1890, with the following results: Jan. 21, 1,146 microörganisms of six varieties in a cubic centimetre of water; Feb. 13, 1,608 of seven varieties in the same quantity of water; Feb. 24, 1,321; March 21, 462, and March 31, 878 of six varieties. The natural or uncontaminated water of Lake Michigan contains only from 50 to 150 microörganisms to the centimetre, and the best authorities claim that water to be fit for domestic use should not contain more than 200 microörganisms to the centimetre.

It is thus seen that during the period occupied by the recent epidemic of influenza and the coincident high ratio of mortality from pneumonia, typhoid fever and gastro-intestinal affections, the water supplied to the inhabitants was both chemically and bacteriologically impure in a high degree.

In studying the atmospheric or meteorological conditions in detail I find some items worthy of carefnl attention. From the records kindly furnished from the U. S. Signal Service Station in Chicago I take the following comparison of mean monthly temperature for the six months ending March 31, 1890, with the corresponding months ending March 31, 1889:

1889.			1890.		
October.	Nov.	Dec.	Jan.	Feb.	March.
49.4°	38.5°	40.6°	30.8°	32.4°	29.5°
1888.			1889.		
48.4°	40.9°	31.3°	28.4°	19.1°	30.5°

Dec., Jan., Feb., 1889, 1890, 34.6°. Average mean, 36.8°.
Dec., Jan., Feb., 1888, 1889, 26.2°. Average mean, 34.1°.

While these figures show the average mean temperature for the six months ending March 31, 1890, to be only 2.7° above the average mean for the six months ending March 31, 1889, the average mean temperature of the three epidemic months, December, January, February, 1890, is 8.4° above the average mean of the same months of the preceding year. And in comparing the extremes of the temperature of the three epidemic months with the corresponding months of the preceding year, I find the average maximum of the former is 61.6°, the minimum 4.3°, and the average maximum of the latter 51.6°, and average minimum 8.3°.

The comparative precipitation of water was 33 per cent. greater the three epidemic months than during the corresponding months of the previous year, thus combining an excess of moisture with excess of temperature.

During the months of October, November, December, 1889, and January, 1890, the prevailing atmospheric currents were from the southwest and comparatively light, the greatest velocity gained being 42 miles per hour on January 8. During February the prevailing direction of the currents was still from southwest, but the aggregate velocity for the month was increased 33 per cent. In March the prevailing direction was changed to the northwest, with severe cyclones in several parts of the country, the highest velocity attained at Chicago being 68 miles per hour on the 27th, and the aggregate distance traveled during the month 13,806 miles. During nearly all the month of December and a part of January the atmospheric currents were not only light, but the air throughout the city was so filled with smoke and aqueous vapor as to render the days very dark, so much so that many places of business had to be lighted, and one day not only business places and private residences, but the streets required artificial light throughout the day. The prevalence of southwest winds during the months of December, January and February not only favored the flow of the contaminated water of the river into the lake, but, coupled with the unusual high temperature, it was bringing the atmosphere from over a wide and rich prairie country filled with the products of vegetable decomposition into all parts of the city.

The first days cold enough to either dry the atmosphere or destroy the organic materials accompanying decomposition were on the 21st, 22d and 24th of January, when the epidemic period had reached its full climax, and from which time it began to decline.

The atmospheric conditions throughout December, January and February in the city indicated an almost entire absence of ozone and hydrogen peroxide, and the presence of an unusual amount of free and albuminoid ammonia. From all the foregoing facts it is apparent that for six or eight weeks before the appearance of any cases of epidemic influenza in Chicago, and during the continuance of that disease, both the atmosphere and water used by the inhabitants were impregnated with an unusual amount of free and albuminoid

ammonia, and the latter with an abundance of microörganisms through admixture of impure water from the river, while the atmosphere maintained an average mean temperature from 8° to 9° F. above the average for a series of years. Similar coincident unfavorable conditions of the atmosphere and water, though in a less degree, have occurred in other years and have always been accompanied by an increased prevalence of gastro-intestinal disturbances, typhoid fever and pneumonia, and they undoubtedly imparted increased virulence to the specific cause of the more generally prevailing epidemic of influenza. What that specific cause was, is still unknown, notwithstanding the diligent observations of hundreds of skilled microscopists on both sides of the Atlantic ocean. That it was diffused in the atmosphere hardly admits of a doubt, for reasons already given; and whether a microörganism, a ptomaine or chemical product, I think the pabulum on which it feeds and multiplies will be found in connection with the free and albuminoid ammonia, more or less of which are almost always present in the atmosphere, as shown by the recorded observations of Prof. J. H. Long for every day in the year ending August 31, 1883.[1] The extraordinary prevalence of pneumonia in Chicago during the month of January, 1890, certainly could not be attributed to intense cold, dry air, as claimed to be generally the case by Dr. H. B. Baker, in an interesting paper presented to this Section last year; for neither in December nor during the first twenty days in January had there been even a single day of severe cold and dry air in Chicago. Neither was the unusual prevalence and fatality of pneumonia limited to Chicago during the month of January, nor the coincident high temperature for that season of the year.

The Signal Service Bureau reported the average mean temperature over the whole country east of the Rocky mountains during the months of December, 1889, and January, 1890, as being from 5° to 13° F. above the average for a series of years. In Boston it was 10°, New York 10°, Washington 12°, Cleveland 13°, Chicago 9°, and St. Louis 10° above the ordinary average; and the official health reports of all these cities show an extraordinary mortality from pneumonia and acute affections of the respiratory passages, especially during the last named month; and in Chicago, although the average or mean temperature of March was decidedly lower than either of the three preceding months, the number of cases of pneumonia diminished, and still more rapidly in April. A careful examination of the records regarding the noted epidemics of influenza in London during the last forty-five years, by Sir Arthur Mitchell, M.D., and Dr. Buchan (see *British Medical Journal*, April 12, 1890), not only show that such epidemics have been accompanied by a large increase in other inflammatory affections of the respiratory organs, but that they also have prevailed most at the same seasons of the year, namely, between the months of November and April. Their statistics further show that the highest ratio of prevalence and fatality of both the influenza and the associated respiratory diseases was neither during nor directly following the periods of most intense cold, as Dr. Baker's theory would require. On the contrary, during the last half of December, 1889, and all the month of January, 1890, the mean temperature was much above the mean for a series of years, while during February and March it fell below the mean; yet the epidemic was at its maximum during January, which is strictly parallel with its prevalence in this country and at the same time. The same writers also note the fact that during the first four weeks in January, when the epidemic was at its maximum in London, only 343 deaths were reported as from the influenza, while the total mortality from all diseases was 10,065, or 2,258 above the mean rate for the same weeks for the previous ten years, the increase being chiefly from diseases of the respiratory, circulatory and nervous structures and rheumatism. These facts are also strictly parallel with what I have already shown to have taken place in Chicago and other parts of this country; and as they have been observed in a greater or less degree in connection with all the more important epidemics of influenza, or la grippe, they very forcibly suggest the existence of some close relationship, if not identity, of causation between it and endemic pneumonia and catarrhal affections of the mucous membranes generally.

Diseases that are known to be caused by pathogenic germs, ptomaines or specific viruses, are seldom accompanied by any marked increase of mortality from other acute diseases, but more frequently the reverse. The fact that the recent epidemic has passed at a period of great activity in microscopic research, both in Europe and America, without any satisfactory identification of a microörganism as its essential cause, affords at least strong presumptive evidence that such cause does not exist. On the other hand, remembering that the epidemic influenza has pretty uniformly been accompanied by an increased mortality from acute diseases generally, with only a small mortality attributed directly to it, while it is accompanied and followed for a considerable time by great impairment of hæmatosis, innervation and muscular strength, the question is again suggested whether the efficient cause does not consist in some modification of the molecular arrangement and properties of those organic products designated as free and albuminoid ammonia, the inhalation of which impairs the function of the corpuscular elements of the blood and excites

[1] See Journal of the American Medical Association, Vol. ii, pp. 169-170, 1884.

irritation in the nervous, pulmonary and mucous tissues of the body. Such a condition would render the system more susceptible to the action of morbific causes generally, with less vital resistance, and thereby account for the marked increase of mortality from all diseases. When another epidemic appears, it is to be hoped that the elements of the atmosphere will be subjected to the most rigid chemical, microscopic and spectral scrutiny.

One more item connected with the recent epidemic is of practical importance, namely: the frequency of relapses and the unusually protracted nervous and muscular weakness that followed a large proportion of the cases. I had the opportunity of observing the characteristics of each of the epidemics in 1847–8, 1857–8, 1872–3, in neither of which was there so great a variety of symptoms and complications as in that of 1889–90. And I am sure that since the subsidence of the recent epidemic in Chicago I have been called upon to prescribe for a larger number of patients complaining of extreme weakness and inability to resume their usual occupations, than after all the three preceding epidemics combined.

The most constant symptoms in these cases were, a great sense of exhaustion on making any physical exertion, a soft weak pulse, cool extremities, frequent perspiration with trembling and sense of inability to breathe, indicating great impairment of the vaso-motor, cardiac and respiratory nerve functions. In many of them there was either paleness or leaden hue of the surface, loss of appetite, mental despondency, irregular pains or hyperæsthesia frequently changing from one part to another, and in some instances anæsthesia or defective sensibility. All of them referred the commencement of their trouble to what they called an attack of "*la grippe*" in January or February, characterized by chilliness, fever, and severe pains, for which they had been treated with efficient doses of antipyrin, acetanilide or some one of this group, and some quinine. The pyrexia and severe pains had been promptly relieved, and though the latter often returned they were as often relieved by the same remedies, but leaving the patients in the debilitated condition I have described. That the antipyretic remedies just mentioned were very extensively used during the prevalence of the epidemic, not only in regular practice but in irregular practice as well, and by patients without the advice of any physician, is shown by the fact that the supply in the market was so rapidly diminished during January and February as to cause a marked increase in the price of those drugs. How far the consumption of these remedies contributed to the extraordinary and protracted physical debility that has followed, is a question of great importance. That in antipyretic doses, they diminish the oxygenation and decarbonization of the blood, retard the metabolic or molecular changes in the tissues, and depress the vaso-motor, cardiac and respiratory nerve centres, is fully proved both by direct experiments on animals and by clinical observation, as I have shown more at length in another paper. Thus Lepine in experimenting on dogs with acetanilide, produced in them trembling, apathy, weakness, diminished temperature, cardiac weakness, and loss of excitability of peripheral nerves. The blood became loaded with methæmoglobin and on analysis showed great deficiency in oxygen. Binett produced similar results in experimenting on cats and rabbits with exalgine (see *British Medical Journal*, February 8, 1890). Henocque in experimenting with the spectroscope found that when these remedies, antipyrin, acetanilide, exalgine, etc., were present in the blood the results were reduction of the oxyhæmoglobin and the production of methæmoglobin with loss of oxygen, thereby asphyxiating the corpuscles. Very recently Dr. John D. Kales has obtained the same results by a series of experiments with the spectroscope in the laboratory of the Chicago Medical College (Medical Department of the Northwestern University).

It is very evident that the liberal use of remedies that relieve pain and reduce temperature by direct impairment of the function of the corpuscular elements of the blood and tissues and of the nervous centres of animal life, could not fail, especially when frequently repeated, to produce great and protracted debility, and sometimes to contribute much toward the development of a fatal collapse, one or two instances of which came under my observation.

Dr. C. A. Lindsley approved the paper, but differed as to the effect on intestinal diseases. In his locality it was confined to the air passages. Noah Webster describes as early as 1789, or 100 years previous to the epidemic under discussion, almost identically the same disease, though no neuralgic symptoms are mentioned. Speaker stated that the epidemic began in New Haven about December 25, 1889, and suggested that others give dates.

On motion of Dr. H. B. Baker, it was requested that the exact dates of the appearance of the epidemic in various localities be noted as suggested by Dr. Lindsley.

Dr. A. N. Bell stated that he had observed that the disease had proved most fatal in cases where there was the greatest depression, or where the surroundings were unhealthy and the vitality of the patient was lowest.

Dr. W. L. Schenck, of Kansas, observed more symptoms of neurotic origin than those of air passages, and treated it as a neurosis. In his State it was sporadic during the last two weeks of December, and epidemic during the first two weeks of January.

DR. RUTHERFORD, of Texas, stated that it began in Rio Grande City January 15, and greatly similated denque. Mortality in Houston great. Gastric catarrh a fatal complication.

DR. J. G. HOPKINS, of Thomasville, Ga., said that the cases in Georgia were complicated with intestinal troubles, that it was an unusual dry season, but that there were no cases of pneumonia, and no deaths in his locality.

DR. ATCHISON, of Nashville, stated that the principal characteristics of the disease in Nashville were extreme prostration and low temperature, no inflammatory complications. Mortality slight.

DR. T. G. HORN, of Colorado, expressed a belief that locality had much to do with characteristic symptoms. In Colorado phthisis was a fatal complication.

DR. J. F. HIBBARD stated that in Indiana, the disease first appeared December 25, and that there were several varieties of the trouble; about one-fourth of the population were affected, but the death-rate did not exceed one in 1,000.

DR. J. T. REEVE, of Appleton, Wis., noted that the disease appeared December 24 in Milwaukee, and that three-fourths of the population suffered from it; did not think the deaths exceeded one in 1,000.

DR. J. COCHRAN, of Montgomery, Ala., stated that the first appearance was in Decatur, Ala., and that a greater number of cases appeared in the pine countries, and sparsely settled districts.

DR. J. S. PLUNKETT stated that many cases which he had observed were complicated with constipation followed by diarrhœa.

DR. A. Y. FIELD, of Des Moines, Ia., believes that impure water should be eliminated as a factor in the causation of the disease, and that the disease has some self-propelling power, and is not dependent on atmospheric influences. The clinical history was that of an ordinary cold with marked prostration.

DR. W. H. LONG, M.-H. S. asked if pneumonia was not the usual complication in fatal cases?

DR. C. H. FISHER, of Rhode Island, stated that the disease appeared in his locality December 20, and that the nasal and pharyngeal symptoms were most marked.

DR. N. S. DAVIS then closed the discussion by stating that the disease was not recognized in Chicago previous to December 24. He did not wish to be understood as attributing the epidemic to impure water, but referred to the existence of unusually impure water in Chicago at this time as a coincidence.

DR. T. MORE MADDEN has received from the Texas Medical College the honorary degree of Doctor of Medicine.

A STUDY OF THE SOCIAL STATISTICS OF 4,663 CASES OF ALCOHOLIC INEBRIETY.

TREATED AT THE INEBRIATES' HOME, FORT HAMILTON, L. I., FROM JANUARY 1, 1880, TO DECEMBER 31, 1888. INCLUDING STATEMENT SHOWING RESULT OF TREATMENT, ETC.

Read in the Section of Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, May, 1890.

BY I. D. MASON, M.D.,

CONSULTING PHYSICIAN INEBRIATES' HOME, FORT HAMILTON, L. I.

Nativity, sex, age, temperament, climate, occupation, custom and social conditions, are important factors in the etiology of alcoholic inebriety, outside of the well-known causes of preceding or accompanying disease or injury and heredity, and also, to a certain extent, are to be taken into consideration in the treatment of all cases of inebriety.

Nativity of the 4,663 cases was as follows: United States, 3,186; Ireland, 826; England, 203; Scotland, 77; British Possessions, 73; Germany, 109; other nationalities, 44; not recorded, 145. The United States naturally compose a large majority, as we find in asylums of other countries, inhabitants of those countries as inmates will be in excess of all others; but we must acknowledge that the nervo-sanguine temperament of the American is peculiarly susceptible to the evil effects of alcohol, and that, other things being equal, the average American would sooner succumb to inebriety than his transatlantic brother. Ireland takes the lead among foreign nationalities. Next in order we have England, Germany and Scotland, the lesser nationalities occur in insignificant proportions, and do not call for special comment.

As a matter of *racial importance* I cannot recall a single instance of acute or chronic alcoholic mania in the negro, among the several thousand inebriates who have passed under my notice during a period of nearly twenty-four years.

In reply to a series of questions, Dr. Landon B. Edwards, of Richmond, Va., informs me "that the negro is rarely the subject of chronic mental or nervous disease, arising from alcohol, although it is rare to find a negro, male or female, who does not drink. Alcoholic liquors are preferred, and yet the laboring negro, as a rule, is not a drunkard." He attributes this to the outdoor life, simple habits, and low grade of nervous organization of the negro.

Climate. As to the influence of climate on inebriety, we have no special statistics to show, but it is a popular impression, that the inhabitants of low levels, especially near the sea-coast, are more apt to be intemperate than the dwellers on the higher plateaus, table lands, and mountainous districts. The influence of certain barometric conditions, dependent upon atmospheric changes, in influencing and producing certain conditions of the nervous system, is familiar to all who have made this subject a special study.

It is also a well-known fact that in malarious districts, the depressing effects of malarial cachexia are counteracted by the free, habitual use of quinine, strychnine, coffee and other nerve stimulants, among which alcohol predominates. No one will dispute the fact that an unhealthy, enervating climate is more apt to produce intemperance and consequent inebriety, than a climate having just the opposite characteristics. Climate, undoubtedly, is one of the factors in the production of inebriety, as it is of other diseases.

Sex.—There were 4,084 males and 579 females. The Fort Hamilton Asylum is intended more especially for males, hence the small proportion of females. It has no provision for females of the better class; the female inmates were from the middle and lower classes of society—but the inference must not be drawn that inebriety does not prevail among females of all classes, or that the above is a fair relative proportion of the inebriates of both sexes. In this country, undoubtedly, the male inebriate far exceeds in numbers female inebriates. But this is not universally the case. In England[1] and Wales the habitual inebriate females already convicted to the habitual inebriate males already convicted are as three to one. In England, he believes, especially among the higher classes of society, inebriety prevails to a greater extent among females than in the same class and sex in the United States.

Social Conditions.—The married male inebriate exceeds in numbers the unmarried male inebriate. There were 2,098 married, 1,744 single, male inebriates; and especially does the married female inebriate in far greater proportion exceed the unmarried female inebriate. There were 401 married female inebriates and only 48 single female inebriates. Must we conclude that, other things being equal, the married life predisposes to inebriety? It would seem so, in the case of females at least. The married female has a much greater strain upon both her mental and physical constitution than the unmarried. A fact substantiated in the reports of our Asylum further shows, that unmarried males are more frequently subjects for readmission than the married; that is, that they are more apt to relapse. The reverse is true in regard to females. Married females are more apt to relapse than unmarried females. The latter are not apt to relapse; if they do, it is the exception to the rule. The spinster, then, is the most temperate member of society. There were 242 widowers and 130 widows also recorded.

Approximation of Ages.—The ages of the majority of the cases treated were from 20 to 60, the greater proportion from 30 to 50, and of these considerably over one-half were between 30 and 40 years of age. Below the age of 20 and above the age of 60, comparatively few. The oldest patient was 73 years of age, and the youngest 18 years. We must conclude that the great majority are of that period of life which is the most effective for usefulness and attainment under normal conditions. In other words, alcohol cripples and handicaps a great majority of inebriates at the most useful period of life. Another fact is, that inebriates may exceptionally, but do *not* as a rule, attain to a *long life*. About one in 385 of inebriates, whom he treated, reached the age of 70 years.

Occupation.—Let us now consider the relation of inebriety to occupation. Imagine a community of 4,663 adult inebriates, embracing every trade, employment or profession. Excluding 234 males who had no occupation, and 562 females, 275 of whom were unemployed, and the balance either domestics or housekeepers, we have about 3,867 males who were variously occupied, representing two hundred trades, professions, commercial, mercantile or agricultural occupations.

We find directly engaged in the *liquor business* 71 bar-tenders and 51 liquor dealers. The indoor trades exceeded the out-door trades. Among those engaged in the out-door occupations, inebriety seemed to affect most those whose business especially exposed them to irregular hours and inclement weather,—teamsters, cartmen, coachmen, carmen, conductors, drivers. One hundred such are recorded. The next in frequency were butchers (45); next stone-cutters (28); next plasterers (26); next coopers (19). The other occupations being at or below the latter figure, and running at or about the same average or percentage. Among in-door occupations we find painters (121) in the majority. The painter handles alcohol, turpentine, etc.; his occupation is not a healthful one; he is apt to contract diseases incident to it, as turpentine poisoning, lead colic, and nervous diseases arising from lead poisoning, as wrist drop, or paralysis of the extensor muscles, etc.

Next in order come printers (58) and pressmen (58). Long hours, extra work, night work and an employment that demands great rapidity, and probably more mental and physical strain than the average occupation, may account for the fact that the printer and the pressman take the second place.

The other indoor trades are in the following order: Shoemakers (45), plumbers (39), tailors (38), hatters (34), tinsmiths (31), waiters (28), photographers (27), carpet-weavers (22), Glass-blowers (21)—the remainder of the in-door trades at or below 20.

The greater part of the various occupations were from mercantile or commercial life. At least 1,200 or 1,300, or about one-third of the entire number belonging to one or the other other of the above classes in the following order: Clerks (565), merchants (283), bookkeepers (100), salesmen (152), agents (78), brokers (44), the balance

[1] Inebriety, by Dr. Norman Kerr, London, Eng.

being made up of canvassers, contractors, railroad officials, bankers, publishers and superintendents, etc.

In agricultural occupations we note, farmers (34) and gardeners (15).

Professions.—Four hundred and seventy-seven, or about one-eighth of the whole number, belonged to the professions, as follows: Physicians (115), lawyers (111), engineers (58), druggists (43), journalists (39), artists (32), students (21), reporters (19), clergymen (10), actors (9), the balance being in small proportion, architects, accountants, actuaries, notaries public, chemists, assayers, army officers, dentists, editors, etc.

Why physicians are in excess of other professions is due to the fact that they lead very arduous lives, both physically and mentally, with irregularity as to sleep and diet, rest and recreation; but there is another fact also, that the physician would be more likely to appreciate and avail himself of the asylum privileges for the treatment of his inebriety than any other of the professions.

In considering the various avocations the usual average relation of the occupation or profession to a normal condition of society must be considered. In this way only can we get at the fact as to whether any one calling exceeds the other in a tendency to lead to inebriety.

Results of Treatment, etc.—Total cases, 4,663; still under treatment, 1,283; total cases discharged and to be accounted for, 3,380; doing well, 1,465, 43 per cent.; lost sight of, 662, 29½ per cent.; unimproved, 555, 16½ per cent.; readmitted, 556, 16½ per cent.; died, 81, 2½ per cent.; transferred to other institutions, 61, 2 per cent.

Doing well.—By this we mean the patient is restored to society, to his business and social relations. Exclusive of *death* and *transfer*, the percentage will be nearer 43 per cent. It must also be considered that the inebriate on an average is not brought to us for treatment until after his inebriety has existed *ten* years, his system broken down, and oftentimes the subject of incurable disease, the result of his inebriety or some disease or injury with which his inebriety is complicated, and which may have preceded and been the cause of it. Again, not only as inebriates apply at a late period for treatment, but only about one-quarter of those who do apply remain over six months, while three-fourths remain at periods varying from one to four months, and the large majority less than the legal limit of three months, so that if we were to apply the same rule that is applied to other diseases which are submitted to us to be cured, that is, having the patient brought to us at a *reasonable period after* the disease tendency has manifested itself, and having also the patient *remain under* our care a *reasonable length* of time for treatment as each case may demand, it would be easy to see that our ratio of cures would be 75 or 80 per cent., instead of 43 per cent. as they now are, which is nevertheless a good showing considering the disadvantages we have had to contend with. We are confident that in the future under proper conditions that at least three-fourths of the inebriates treated in our asylums will be cured.

Thirty-six cases were *lost sight* of, or *unimproved*, but this does not mean they will not be heard of again; a certain proportion will return to our institution, and of these a number will be cured. Some of our most successful cases are those who have been in the asylum at different periods under treatment. Of the balance, some will die, others will move away, others go to similar institutions elsewhere located. We shall not make any comments as to *deaths* except to call attention to the *remarkably* small percentage, which is about equally divided between those who died outside of the asylum and those who died in the asylum. Some 61 were transferred to other institutions—30 to the *lunatic asylum*. We observe the tendency of inebriety toward insanity. The great majority of inebriates carry unevenly-balanced minds; they are on the verge of insanity all the time, and not unfrequently pass over the line. In any inebriate asylum it would be safe to assert the large majority of inebriates, at least for the first few weeks after their entrance into the asylum, are in a mental condition, that to say the least, is not normal. The above 30 transfers were marked cases of lunacy, acute or chronic mania, which were not suitable for an asylum of our character. The moral effect and the law of association forbid that the inebriate of weakened mind and body should be associated with insane persons. The tendency of every inebriate is that way, and such association would only precipitate the event. This is the principal argument against the incarceration of insane persons and inebriates in the same institution, although there are other arguments equally effective. A certain proportion of persons were brought to the asylum suffering from various diseases or infirmities that rendered them unfit subjects for our asylum. Of these some 31 were transferred to hospitals or other institutions.

We have thus given a few general observations, resulting from a study of these special statistics. We have not by any means exhausted the subject, but we trust we have added some points of interest and importance, not only to the etiology of inebriety, but also some indications for its most successful treatment.

THE Paris Municipal Council has just voted 270,000 francs ($54,000) for the construction, on ground cut off from the Mont Parnasse cemetery, of a sleeping refuge for pregnant women in a state of destitution.

THE MEDICO-LEGAL RELATIONS OF PARALYSIS FROM BRAIN DISEASE.

Read before the Section on Medical Jurisprudence at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890

BY DANIEL R. BROWER, M.D.,

OF CHICAGO, ILL.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM DIDACTIC AND CLINICAL, IN THE WOMAN'S MEDICAL COLLEGE; PROFESSOR OF MENTAL DISEASES AND LECTURER ON THE PRACTICE OF MEDICINE IN RUSH MEDICAL COLLEGE, CHICAGO, ILL.

Hemiplegia, be it complete or partial, is a frequent and important result of brain disease. Any cause that sufficiently disturbs the nutrition of the psycho-motor centres of the brain, or the motor tracts below these centres, will produce this condition. The severe forms of cerebral congestion, cerebral hæmorrhage, cerebral embolism, cerebral thrombosis, cerebral abscess, cerebral tumor, may be enumerated as pathological conditions producing this paralysis. In the case of hemiplegia following cerebral congestion the duration of the pathological condition is short, and the resulting mental disturbance is slight and not usually of long duration. The extent of the paralysis, its duration, and the resultant mental disturbance depend upon the situation and extent of the pathological lesion. They all produce more or less mental disturbance, such as irritability of the emotions, irresolution of purpose, failure of memory, and interfere with the power of converting words into ideas. The tracts in the internal capsule, through which the conduction of nerve impulses have to travel, are in such close and intimate relationship with the speech centre, directly on the left side and indirectly on the right, that there is more or less disturbance of this function in every case. In some the disturbance is transitory and not very pronounced; in other cases it is of long duration and extreme.

The ordinary onset of hemiplegia, be its cause what it may, is a loss of consciousness. The shock has produced a condition of things so profound that the patient is devoid of all power of expression. In the milder cases, if consciousness is not entirely lost, it is usually more or less impaired. This loss of consciousness may be due simply to the shock to the nerve centres, of a hæmorrhage or an embolus, or to the completion of the thrombosis; or it may be due to the congestion of other territories of the brain, that is the secondary result of cutting off the territory that gives rise to the hemiplegia, from the blood-supply. This congestion of the brain will produce more or less exudation, and this exudation, by pressure and irritation of the cerebral convolutions, will more or less impair the nutrition of the cells of the brain and the nerve fibres connected therewith. The secondary anæmia that ensues must be followed by more or less venous congestion, and the venous congestion must have as its secondary result a similar condition of exudation, so that the exudates from the active congestion and the exudates from the passive congestion must more or less impair the functional power of the cerebral hemispheres; so that it is not surprising that in every case of hemiplegia there is in the beginning more or less disturbance of the mind. This mental disturbance is characterized by an undue activity of the emotions, by impairment of the intellectual powers, by a dulness of the perceptions, and a lack of will power. In all cases of cerebral paralysis, but especially in the cases of right hemiplegia, there is more or less inability to properly express mental activity either in speaking or writing. The wrong words are used, and very frequently the wrong idea. The words used may not be in accordance with the idea intended to be expressed, so that errors of a serious legal character may occur out of this condition of the cerebral mechanism. They may know perfectly well what they desire to say or to write, but the disturbance in the mechanism of speech and of writing may cause them to write or to say things that they did not intend to say, and thereby seriously violate their normal legal relations.

Our attention has just been called to a case of right hemiplegia in a gentleman possessed of considerable property, with a wife and daughter to whom he had always been most affectionately attached. He made a will, and in that will he bequeathed all his property to his three brothers, already comfortably well off, and with whom he had had for years very little, if any, intercourse, and that of a not very amicable nature, cutting off his natural heirs as far as possible, with whom his relations before and during his paralysis had always been of a most agreeable kind. Just what the condition of mind was that caused this man to commit this breach, it was not easy to determine. Whether he was at that time in a condition of disordered affections, so as to change entirely his natural and reasonable relations to his wife and daughter, and to make unnatural his relations to his brothers; or whether he had, when the will was drawn up, this disturbance in converting into proper language the ideas he intended to convey, and signed the paper without a correct understanding of its contents, is, of course, merely speculation.

I gave the opinion that the will should not stand, that it should be set aside on the ground that the man's mental condition growing out of this paralysis from brain disease, the result of cerebral hæmorrhage, had disturbed his mental condition to such an extent as to make it impossible for him to rightly understand the relations he bore to his family, and to properly convey in language the ideas that originated in his brain.

Such is the profound disturbance of the brain necessary to produce paralysis, and so intimate is the relation of the psycho-motor centres to the emo-

tional and intellectual centres that the paralysis should at least in the earlier stages, raise a presumption of mental impairment, which may be of such a kind and degree as to vitiate a contract or make null and void a will; but as the cases progress the mental equilibrium may be restored even though the paralysis does not improve. The Courts, on the contrary, have repeatedly decided that cerebral paralysis does not raise such a presumption. The Supreme Court of Illinois in Trish *v.* Newell, 62 Ill., p. 201, says: "It is no more a presumption of law that a person rendered unconscious and incapable of mental action by a stroke of paralysis, will continue so for four months thereafter, than that he would so continue when the effect was produced by a wound on the head. Such a result might follow in either case, but the law does not presume that it would in either." In this case the testator was stricken with paralysis when 80 years old, rendered quite, if not wholly unconscious, remained helpless, one side continuing paralyzed, and his powers of speech irrevocably lost. The will was made three months subsequent to the apoplexy. In the Court below the will was set aside, but the Supreme Court reversed the Court below. The Supreme Court of Illinois in Rutherford *vs.* Morris, 77 Ill., (397,) cited and approved the above decision, and in giving its opinion, indulged in a fierce diatribe against medical expert witnesses.

The Supreme Court in Brown *vs.* Ridgins, 94, Ills., 568, again cites and approves this decision, the testator in this case being a woman of 62 years, who had cerebral paralysis with an epileptiform onset, and who made a will nine days after the seizure.

The Supreme Court of Pennsylvania in Landis *vs.* Landis, i Grant's cases, 250, cites and approves this same decision.

In the case of a woman who was stricken with paralysis in June, and again in July, who made a will in September 9, and died on October 2, the Court says that mental incompetency does not follow as of course, and it must be shown *aliunde*.

While the legal responsibility of every case of cerebral paralysis should be judged by its own merits, yet the presumption of mental impairment, possibly to the extent of rendering null and void a contract, or vitiating a will, should be present in every case, and if that will or contract is not clearly reasonable, the burden of proof should be with the defendant. He should be required to show that patient was not of unsound mind at the time of making contract or will.

ON May 21 the Duke of Connaught formally opened the Jubilee Hospital just completed at Victoria, B. C., which has been erected in commemoration of the Queen's Jubilee.

MEDICAL PROGRESS.

MASSAGE IN GYNECOLOGY.—DR. GAUDIN, in *El Prog. Gyn.*—In 1868 Brauel first suggested it as a means of treating uterine affections. It may be used in the so-called external form by frictions, and by relaxations of the abdominal wall, through which the volume and outlines of the uterus may be perceived. This suggests that massage can be used only in cases in which there is little abdominal adipose tissue. The patient should be in the dorsal position, with thighs flexed and knees separated. The rectum and bladder must be empty and respiration must be regular. Kaltenbach has advised that the bladder and rectum be filled with warm water, the vagina tamponed, and that these cavities be quickly evacuated when one is about to make a bi-manual exploration. Such a plan is of advantage in many cases, especially if one is making an exploration for purposes of diagnosis, but it would hardly be suitable for daily use in cases in which massage is to be employed. It is important that the fingers which are to operate in massage be applied with the palmar surface tangential to the diseased organ—that is, they are not to be forced perpendicularly upon the organ. The adominal and vaginal walls may at first show a certain degree of rigidity, but there is always a space in which the finger can be placed in every case which is suitable for this treatment—namely, the fundus of the anterior subpubic space, immediately behind the symphysis pubis. The external hand, therefore, will have its grasp above the mons veneris, the fingers radiating toward the umbilicus, while the index and middle fingers of the other hand will be passed into the vagina. If one finger alone is introduced into the vagina, it may cause either pain or undue excitement. The dorsal surface of the fingers introduced into the vagina should rest against the posterior commissure of the vulva. The movements of friction, pressure, and malaxation should always be slow and regular. The force exercised by the two hands should be in exactly opposite directions—that is, while the external hand should work downward, the fingers within the vagina should work upward. Anteversions of the uterus show better results from massage than any other form of displacement. In chronic metritis, and all other affections which result in hypertrophy of the uterus, the fingers within the vagina should support the uterus while friction is exerted by the external hand upon the posterior portion of the organ, a concentric compression being practiced. If there is infiltration in the circum-uterine cellular tissue, the external hand should fix the organ while massage is practiced by the fingers in the vagina upon the cervix and the anterior and posterior

portions of the uterus. When the uterus is fixed in pathological anteflexion or anteversion, a kind of passive gymnastics should be practiced upon such portions of the organ as may be moved; if atrophy or sclerosis are present, one can only hope for an improvement, but not a cure of the condition. If flexion is the result of adhesive bands caused by pelvic peritonitis, the prognosis will be favorable; massage will produce a decided improvement in the circulation. Massage is contra-indicated in conditions of acute inflammation.

Rigorous antisepsis should be observed in all cases in which this treatment is to be employed. The diagnosis should be exact, and the seat of the lesion carefully determined in every case. The mobility or immobility of the uterus, the existence or non-existence of adhesions, should all be carefully ascertained, and in some cases it will be necessary to use an anæsthetic before a diagnosis can be made. Massage per rectum is advocated by some, but is believed to be impracticable on account of the slight tolerance of such interference by that organ. The uterine affections in which this treatment is indicated are the following:

1. All chronic and atonic conditions of the uterus.

2. Uterine inertia and its consequences—amenorrhœa, dysmenorrhœa, chlorosis, and anæmia.

3. Neuralgia of the pelvis, coccygodynia, oöphoralgia, etc.

4. A tendency to the accumulation of fat in or upon the genitals.

5. It is also recommended by some gynecologists for those nervous or mental disorders, which appear to be reflected from uterine disease—such as hysteria, neurasthenia, hypochondria, etc.; but for such conditions the author believes this treatment uncertain and dangerous.—*Arch. Gyn. Obstet. and Pæd.*

THE SUBCUTICULAR SUTURE.—This is the name given by MR. KENDALL FRANKS to a method of suturing wounds, especially small wounds about the neck and face, where it is desirable, for cosmetic effect, to leave as little trace as possible in the form of a scar. The suture is a continuous one, and fine catgut must be used and a fine curved needle. The needle must be passed horizontally, and at the cut edge of the wound, not at a distance from the edge, as in ordinary suturing. The author's description in the *British Medical Journal*, is as follows: "I begin at a point about a quarter of an inch from the upper angle of the wound. The needle is passed horizontally underneath the epidermis of the skin into the cutis vera, and emerges again from the cutis vera at the angle of the wound itself. It is then passed in a similar manner into the cutis vera alone on the opposite side of the wound, beginning at the extreme angle and emerging at a point a quarter of an inch from it. The catgut is drawn through so as to leave just enough at the first point of entrance to enable it to be tied to the portion of the suture which holds the needle. This forms a starting-point. The needle is again inserted horizontally into the true skin, beginning immediately below the first point of entrance, and comes out again a quarter of an inch lower down; it is then passed similarly into the other edge of the wound at a point corresponding exactly to the last point of emergence on the opposite side, being brought out again a quarter of an inch lower down. This method is continued until the lower angle of the wound is reached." Of course, as the suture is tightened the cutaneous edges of the wound will be brought into close and even apposition. An experience of several years with this method, especially in connection with wounds made for the removal of scrofulous glands in the neck, has satisfied the author of its utility. It also has the indorsement of such well-known men as Dr. Clifford Albutt and Mr. Pridgin Teale. It is but another form of buried suture, and certainly must require very delicate manipulation, a very fine needle, and aseptic catgut in order to insure a successful result. It is well conceived, and does away not only with the blemish of a linear scar in a conspicuous place, but also with the equal unsightliness of stitch marks. As the author remarks, this is not a slight consideration for women or for men with whom occupation or fashion interferes with their allowing the hair to grow in the vicinity of such disfigurements.—*New York Medical Journal.*

VAGINAL EXTIRPATION OF THE UTERUS FOR RETAINED PLACENTA.—A case of this character is reported from the practice of L. ROOSENBURG. The patient, a woman 24 years of age, had borne two children at full term and had aborted once at six months. The midwife removed the placenta with difficulty; later on the uterus was curetted on account of hæmorrhage. On the 24th of March the patient again aborted at the fourth month. The midwife attempted to remove the placenta, but the cord broke off, leaving the placenta *in utero*. A chill followed by fever set in immediately after delivery. These attacks were repeated daily and became more severe; the lochia became foul and scanty and the patient rapidly sank. The author was therefore called in on the 30th of March. On the following day the patient was admitted to the hospital with a temperature of 41.5°, a pulse of 130 and respiration 40. She complained of dyspnœa. On internal examination the os uteri was found to be surrounded by a thick inelastic wall which admitted only two fingers; the placenta could not be felt. After thor-

ough disinfection iodoform gauze was introduced. In the night the temperature fell to 37°, but rose again the following morning, reaching 40.3; pulse 132, respiration 44. On the following morning the tampon was removed. The os had not dilated, but an attempt was made to remove the placenta by means of Volkmann's spoon—this attempt failed. On the following day the patient's condition was still worse, and believing that she could not live twenty-four hours longer under existing circumstances, the reporter decided to remove the uterus through the vagina. This operation having been performed, iodoform gauze was introduced into the lower part of the peritoneum and the vagina packed with cotton soaked in iodoform glycerine. The patient's condition rapidly improved; the ligatures came away in ten days, and in two weeks the patient was able to walk about. The uterus was examined immediately after the operation. Upon cutting halfway through the thickness of its walls a very fetid odor was noticed; a second stroke of the knife divided the placenta and laid open the uterine cavity. The placenta was firmly adherent, was black on its free surface and emitted a horrible odor. At various points placentitis was seen.—*Cent. für Gyn.*

THE THERAPEUTICS OF CHLORALAMIDE.—So many new drugs are being put on the market, that no practical physician can hope to take cognizance of all of them. The Germans manufacture new compounds *ad infinitum*, and have been doing so for years, but only a few have taken and held any recognized place in the therapeutics of to-day. Chloralamide is a comparatively recent one, but it would appear that it has come to stay. In an interesting article on this drug by DR. STEELE, *Pacific Med. Jour.*, he gives the following as its therapeutical indications: Chloralamide is successfully employed in conquering insomnia, and particularly that form denominated simple or idiopathic insomnia, not due to excitement or severe pain. It is, furthermore, possible for the wakeful patient to enjoy several nights of natural sleep after a single dose. The best results occur when the drug is used in insomnia due to nervousness, neurasthenia, hysteria, "spinal disease" or old age; next best when the causes are chronic alcoholism, alcohol excess, cardiac and bronchial asthma, pleuritis, phthisis, pericarditis, arterial sclerosis, organic heart disease, typhoid fever, gastritis, subacute nephritis, ascites, diabetes mellitus and in the morphine habit. It is less effective when wakefulness is due to tabes dorsalis, neuralgia, progressive paralysis, the excitement of insanity, cerebral softening with delirium, melancholia, chronic mania and acute mania. In these conditions, doses of from 30 to 60 grs. are required, providing such doses are tolerated. The drug is useless when the insomnia results from paralytic dementia, maniacal excitement or hallucinations, severe neuralgia or other pain, violent cough, distressing headache, delirium of cerebral apoplexy and from delirium tremens. Even pain, when not acute, is often relieved, and the large doses necessitated are, by many patients, preferred to morphine. Chloralamide, in doses of from 20 to 60 grs., has checked the pains of thoracic aneurism, carcinoma of the stomach and liver, sarcoma of a rib, erysipelas, rheumatic fever, floating kidneys, neuralgia, gallstone, varicose ulcer and alcoholic neuritis. In chorea, a boy of 11 years of age was cured in five days by 15 grs. of the drug given three times daily, and in like manner a girl, after receiving no benefit from other forms of treatment, was afforded relief in eight days. When administered in phthisis it was found that the troublesome night sweats disappeared.—*Canada Lancet.*

A NEW METHOD OF TREATING FRACTURED PATELLA.—At a recent meeting of the Clinical Society of London, MR. MAYO ROBSON showed a patient (a young woman) on whom he had operated by a novel method to secure bony union in a case of fracture of the patella. The skin over and around the joint was cleansed and rendered aseptic and the joint then aspirated. Drawing the skin well over the upper fragment, a long steel pin was passed through the limb from one side to the other, just above the upper border of the patella. The limb being similarly transfixed just below the patella, gentle traction on the pins brought the fragments into apposition. Antiseptic dressing was applied and left undisturbed for three weeks; when it was removed there was no sign of irritation, and the temperature had never been above normal. As the fragments seemed well united the needles were withdrawn, a plaster of Paris splint applied, and the patient allowed to go home. Mr. Robson observed that the only precaution necessary was to draw up the skin over the upper fragment, in order to avoid undue traction upon it when the fragments were approximated. If there was much effusion in the joint it would be desirable to aspirate.—*Medical Record.*

RESORCIN AS AN ANTIEMETIC.—Although impure resorcin as a rule causes nausea and vomiting, the chemically pure article, according to ANDEER, is the surest antiemetic that can be administered in all kinds of vomitings from the most varied causes, even in the persistent vomiting of hepatic, renal and menstrual colic, in the pernicious vomiting of pregnancy, in sea-sickness, in vomiting after overindulgence in food, drink, etc. It may be given in solution or powder in daily quantities of from 0.5–3.0 grm.—*Ther. Monatshefte.*

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SATURDAY, JUNE 7, 1890.

MEDICAL EDUCATION AND MEDICAL COLLEGES.

In response to the circulars sent out by the medical colleges of Baltimore, inviting a convention of delegates from all the medical colleges in this country, delegates representing fifty-five such colleges assembled in the Senate Chamber of the State House, Nashville, Tenn., and were called to order at 3 P.M., May 21, 1890. PROF. FRIEDENWALD for President and PROF. WINSLOW ANDERSON for Secretary, were made temporary officers. The Secretary having completed the list of delegates present, a committee of five was appointed to report on permanent organization. This committee after a brief consultation recommended a permanent organization to be called "The National Association of Medical Colleges," and nominated the following officers: For President, N. S. DAVIS, Chicago; First Vice-President, AARON FRIEDENWALD, Baltimore; Second Vice-President, H. D. DIDAMA, Syracuse, N. Y.; Third Vice-President, T. MENEES, Nashville, Tenn.; Fourth Vice-President, SAMUEL LOGAN, New Orleans; Fifth Vice-President, W. H. PANCOAST, Philadelphia; Sixth Vice-President, C. A. LINDSLEY, New Haven, Ct.; Seventh Vice-President, W. F. PECK, Davenport, Ia.; Secretary and Treasurer, PERRY H. MILLARD, St. Paul, Minn.

The report of the committee was accepted and the officers nominated were unanimously elected.

Dr. Davis on taking the chair briefly urged upon the convention the desirability of an immediate and general adoption of a more complete and graded curriculum of studies, longer annual courses of college instruction, and a fair standard of general education before entering upon medical studies. He stated that much advancement had been made, many of the best medical colleges in the country already fully occupying the advanced position desired; but the honor of the profession and the interests of the people alike require that all should come up to the same advanced standard.

A committee was appointed to report definite propositions for the consideration and action of the Association, and report to an adjourned meeting at 8 P.M., in the same place.

At the time and place designated the College Association was called to order by the President. The Committee on Business reported a series of propositions which were considered *seriatim*, and after some amendments were adopted as follows:

1. That the colleges represented in this Association adopt three graded courses, of not less than six months each, no two courses to be given in the same year.

2. That both oral and written examinations be required of all students.

3. That laboratory instruction in chemistry, histology, and pathology be required.

4. That the colleges belonging to this Association demand the following examination of all applicants for matriculation, viz.: A composition in English of not less than 200 words; the translation of easy Latin prose, provided, that students be allowed one year to make up any deficiency in regard to this item; an examination in higher arithmetic and in elementary physics. It is provided, however, that candidates who are graduates or matriculates of recognized colleges of literature, science and art, or of normal schools supported by the different States, be exempt from the provisions of this examination. It is furthermore provided, that it shall be the duty of the secretaries of the various colleges composing the Association to transmit, on request, to the Secretary of this Association a list of all the matriculates, together with a copy of all questions propounded at the matriculation examination. It is also provided that all the matriculation examinations be in writing and, when requested, the original papers shall be forwarded to the Secretary of this Association.

5. That the adoption and enforcement of the above requirements by a college be necessary to the admission of said college to this Association or to its continual membership in the same.

6. That the above requirements be enforced with the matriculates of the session of 1892–93.

7. That each college in this Association be assessed annually the sum of $5 to defray necessary expenses.

The three first propositions were adopted without discussion and with apparent unanimity. The fourth, however, relating to a standard of pre-

liminary education for matriculation in a medical college, elicited a free interchange of views, during which it became apparent that several delegates representing Southern and Southwestern colleges thought their respective institutions not quite prepared to enforce such a rule. No one claimed that a good general education was not exceedingly desirable as a preparation for commencing the study of medicine, but it was feared that its positive requirement would so far diminish the aggregate number of medical students as to leave some of the colleges without adequate support; or the greater fear that some colleges would not enforce the requirement and thereby fill their halls at the expense of those that did so, in good faith.

All admitted that the proposed advance was desirable and must be made some time in the near future. This led to the suggestion that such colleges as desired a little time for further preparation be allowed two years before carrying all the requirements specified into practical effect, which was adopted as shown in the sixth proposition above. With this concession the requirements specified for matriculation, and all the other propositions, were adopted without further opposition, and in a spirit of harmony that portends the most gratifying results. It was evident from casual expressions that a large proportion of the delegates present were authorized to pledge their respective colleges to comply with the several propositions as adopted by the Association, but as others disclaimed having such authority, the Secretary was instructed to send a copy of the proceedings of this meeting to all the medical colleges in the country, asking them to indicate their sanction of the several propositions adopted, and their coöperation as members of this College Association.

When it is remembered that not less than fifty of our medical colleges, including many of the oldest and most influential in the country, are already practically fulfilling all the requirements proposed, and that the laws in several States are such that a diploma from colleges not complying with these requirements, will not procure for its possessor even an examination for a license to practice, it must become evident to all that in less than five years, the medical college that continues to grant diplomas after attendance on two repetitional courses of lectures and no preliminary requirements will find its halls deserted, notwithstanding the cheapness of the honors it confers. The present movement for a more general advance is made in a spirit of harmony and moderation, and it is hoped that it will be favored by every medical college possessing the elements of vitality and the necessary facilities for medical teaching.

THE ANNUAL MEETING AT NASHVILLE.

We only had time, in the last issue of THE JOURNAL, to refer to the opening session of the Forty-first Annual Meeting, and to make a brief reference to the President's Annual Address.

The interest in the following morning sessions was maintained to the last. The special addresses delivered by Drs. DAVIS, CARROLL and LOGAN were timely, able and well received. They are models of their kind, and will well repay the careful perusal which we are sure they will command. They will be found in full in the issues of May 24 and 31.

The usual routine of business was promptly dispatched, and it was evident on all hands that the general welfare of the Association was the chief concern of those who participated in the proceedings. Several important resolutions were introduced, to which at later dates we shall have occasion to refer.

In the Sectional work, which controlled the time and labor of the members during each of the afternoons, large numbers of papers were presented, representing much valuable material which will constitute a most desirable contribution to the Original Department of THE JOURNAL during the current year. The wisdom of creating special Sections for special work was never more noticeable than at this meeting, and the Chairmen and Secretaries are entitled to very great credit for the perfect arrangements of their programmes and for the precision with which their work in the Sections was conducted.

It is obvious that the essential value of the Association to the membership in the future will largely depend upon the wisdom and efficiency with which the Section programmes are prepared. We can hardly commend this fact too strongly to the attention of the officers of the various Sections for the ensuing year.

The election of DR. WM. T. BRIGGS, of Nashville, was a well deserved tribute to himself, to

his city, and to the profession which he so worthily represents.

Perhaps never in the history of the Association have there been such delicate and appropriate expressions of hospitality as were accorded to the physicians and their ladies by the ladies of Nashville; and while they were in every instance most royally bestowed, it is a most commendable fact that the entertainments were so arranged as not to interfere with the working hours of the Association. This was a feature which we not only endorse in the strongest terms, but we suggest that it be permitted to govern in all future arrangements for our medical meetings. We are confident that our medical men and their ladies will long hold in pleasant remembrance the Annual Meeting at Nashville.

MEDICAL MEN IN THE CORONER'S OFFICE.

The intelligent physicians and jurists of Denver have been led to the formation of a medico-legal society, as a partial corrective of the coronerial status in Colorado. As in many another State, the office of Coroner is more political than scientific; no medical qualifications are essential; no post-mortems need be held unless the Coroner shall so ordain, and the rules of the County Commissioners aim rather at a cheap administration of the office than at a satisfactory rendition of the causes of sudden death, whether they be or not of a suspicious or obscure character. Nearly every young community must struggle along for years in a contention with flimsy and inadequate laws, with a miserly policy of reimbursing those who do the scientific work in inquest cases, and with the non-recognition of medicine in civic organizations. The idea that physicians have any official importance in the commonwealth is always a backward product. In Denver the conditions are probably no worse than in many an older community, but its people are more alert in regard to the causes of sudden death, in part, because they have more of them. The Medico-Legal Society of that place was recently addressed by Dr. J. T. Eskridge for the purpose of suggesting a remedy for inadequacy in the public records pertaining to violent deaths. His remedy consists in the appointment of a consulting physician to coöperate with the Coroner, and to draw a fair salary as a county official; he it is, and not the Coroner, who shall decide upon the question of holding autopsies and the extent to which the investigation should be carried in difficult and mysterious cases. This suggestion was adopted by the society and a committee was appointed to see what practical steps can be taken to secure the creation of the office of medical consultant to the Coroner. This was little other and better than a compromise result, since there was a strong expression of opinion on the part of the members that the true solution of the difficulty resided in the selection of a physician, and not a layman, for the Coronership itself. If the law could be so framed as to make trained medical men alone eligible to the office of Coroner there would be no necessity for having two officials, as implied in the proposition of Dr. Eskridge. But ordinarily there are political reasons why a layman would commonly have the preference over the physician, no matter how well qualified and trained, and a law is necessary to show the people that their best protection against certain dangers to life and to the miscarriage of justice is to be found in putting a higher value than is generally done on the physician's responsibilities and almost constant usefulness in public affairs, where life and death are among the factors to be considered. It is proper to say here and to repeat in public, whenever our words can give a healthful impetus to the reflections of good citizens, that the experience of the world has been that a good and thorough lay Coroner is the exception and not the rule, while an inefficient medical man in that office has hardly ever been known. Of course, in the older countries of Europe, there have been ample chances to judge between the two classes of officials just referred to, and there is abundant testimony to prove the clear title which vests in the medical man for fitness for, and an almost invariably satisfactory performance of, the office of the "Crowner's quest."

EDITORIAL NOTES.

The Academy of Medicine.—The old New York Academy building has been sold to a library association for $60,000, or $20,000 less than was expected to be realized. The new Academy is rapidly approaching completion, but it will require three or four months to bring about the removal and the re-organization.

NEW HAMPSHIRE MEDICAL SOCIETY. — The ninety-ninth annual meeting will be held in Concord, Monday and Tuesday, June 16 and 17, 1890, at the hall of the G. A. R., 15 Warren street, commencing at 11 o'clock A. M. There will be a meeting of the Council on Monday evening, June 16, 1890, at the hall of the G. A. R., at 7 P. M. As this meeting is designed to consider all questions relating to ethics or new business, and to attend to all applications for membership, it is hoped there will be a full attendance of the Councillors. All members having business or papers to present to the Society must bring them in person, or forward them to the Secretary in season for this meeting. All applications for membership must be made to the Secretary prior to this meeting, giving full name and place of business, when and where graduated, and, unless personally known to one or more members of the Council, the applicant should forward a recommendation from some member of the Society. Members of District Societies will be admitted on a certificate of membership from the President or Secretary of the District Association. This meeting will be called to order promptly, in order that members of the Council may complete their work in season to attend the reception given by the management of the New Hampshire Asylum for the Insane and the Board of Commissioners of Lunacy.

THE PASTEUR INSTITUTE AT NEW YORK.—Dr. Gibier of this institution reports that the number of persons admitted for treatment, in March and April, was 20, of whom thirteen were received in March.

CURIOUS CASE OF CATALEPSY.—The Paris correspondent of *The Lancet* relates the following curious case as having occurred at Dunkirk on April 14, and as "showing the utility of catalepsy." A young girl of 17 years was seized with a violent attack of epilepsy, and fell on the above date into a canal. A boatman immediately jumped into the water to save her, and brought her to shore after twenty minutes. The most singular circumstance connected with the accident is that when the young girl was taken out of the water she presented all the symptoms of catalepsy; and notwithstanding this long immersion, she was resuscitated, and nothing afterwards transpired to cause any anxiety.

THE AUSTRALIAN RABBIT PEST.—*The Lancet* says: The final report has been issued of the Royal Commissioners in New South Wales on the result of the schemes received in response to their proclamation of August, 1887, offering a reward of £25,000 for any method for the effectual extermination of rabbits. The schemes were very numerous, and suggested various methods. The commissioners advise that when necessary the State should advance to lessees of Crown lands and occupiers of land the cost of netting fencing on certain conditions; but they have found no evidence to warrant the belief that any known method can exterminate rabbits.

MEDICAL SOCIETY OF WEST VIRGINIA.—The twenty-third annual meeting will be held at Wheeling, W. Va., June 11, 12 and 13, 1890. The Committee of Arrangements is making special preparations for the entertainment of members and guests.

THE INTERNATIONAL MEDICAL CONGRESS AT BERLIN.—In the Section of Pharmacology, a discussion on Anæsthetics will be opened by Dr. Lauder Brunton, and one on the Pharmacopœia question by Dr. Langgaard. Addresses will also be delivered by Professors Binz, Böhm, Brackett, and Liebreich. A *souvenir* of the meetings will be presented to the members of the section in the form of a "conspectus" of all the German essays on experimental pharmacology which have appeared during the last twenty-five years.

CREMATION.—The sixth meeting of delegates from the various cremation societies will meet at Berlin from August 4th to 6th. The following is the programme as at present arranged: Report on the position of legislation with regard to cremation in different countries; the conditions of transport of dead bodies on railways in Germany and elsewhere; discussion on the best kind of cremation chamber, and the results by experience in different countries.

THE LATE PROF. DAMASCHINO.—The friends and pupils of the late Prof. Damaschino have opened a subscription to meet the cost of placing his bust in the Examination Hall of the Faculty of Medicine, Paris.

LEPERS IN INDIA.—At a recent meeting in London it was stated that the official statistics estimated the total number of lepers at 135,000.

TOPICS OF THE WEEK.

TRIBUTE TO THE MEMORY OF THE LATE DR. BYFORD.

The Obstetrical Section of the American Medical Association, in session at Nashville, Tenn., May 22, 1890, on hearing of the death of Dr. W. H. Byford, of Chicago, resolved to inscribe upon the records of the Section the following tribute to his memory:

In the midst of our deliberations while here assembled in the interest of our noble profession, the death-knell has sounded, and as we listen there comes to us the sad message that a noble life is suddenly ended. The shaft that represents a grandly developed character had risen in its symmetry and in its beauty to unwonted proportions until it had reached its full development. The finial stone is laid, and it stands complete.

William Heath Byford, one of the Vice-Presidents of this Association, a Chairman of our Section, for more than a third of a century a most distinguished teacher of gynecology, whose writings are text-books, and whose name and fame are National, is dead.

Pausing in the midst of our deliberations and bowing reverently and submissively to the mandate that has summoned him away, we desire to inscribe upon the pages of our proceedings the record of our grief.

We would lay upon that silent casket a wreath of *immortelles* expressive of his worth; we would strew upon that open grave the choicest flowers as a tribute of our affection; we would mingle our tears with those who weep in the expression of a common sorrow.

Formal resolutions are idle in the expression of our grief. We inscribe upon our records the heartfelt tribute which we would pay to that pure and noble life which will ever be cherished in grateful remembrance, and we direct that a copy of this expression be forwarded by the officers of our Section to the family which mourns such an irreparable loss.

FRANKLIN H. MARTIN,
THAD. A. REAMY,
J. G. MEACHEM.

THE NEW PHONOGRAPH OF EDISON AS A UNIVERSAL ACOUMETER

Dr. L. Lichtwitz, of Bordeaux, proposes the employment of Edison's new phonograph as the universal acoumeter (*Annales des Maladies de l'Oreille*, October, 1889). At present the three tests of hearing are the watch, the tuning-fork, and the human voice. The first-named is very poor, the last named is the best. The characteristics of a good acoumeter are then given as follows:

1. The acoumeter should be able to emit all the sounds perceptive by the normal human ear, especially speech in all its inflections.

2. It should be a constant source of sound in order to facilitate a comparison of hearing in different patients, and in the same patient at different epochs of his disease.

3. It should be an apparatus of uniform construction, in order to render its employment universal among aurists of all countries and make the registration of audition easily comprehensible, as the ophthalmologists can do in regard to vision.

4. Its employment should be easy, without requiring too much time or space for its use.

5. It should render possible the measurement of the sharpness of the hearing both by aërial and cranio-tympanic conduction.

The new phonograph of Edison possesses, if not all of these qualities, at least the first two, which are indispensable in a good acoumeter, and it is said to be possible, by some modifications, to give this instrument all the desired qualities of a perfect acoumeter.—*Amer. Jour. Med. Sciences.*

IS LEPROSY CONTAGIOUS?

Under this heading (*Monatshefte fur praktische Dermatologie*, October 1, 1889) Prof. Smirnoff, of Helsingfors, refers to the diametrically opposite views put forth by two authorities, Hansen, of Bergen, and Zambaco, of Constantinople. The former expressed himself, at the International Medical Congress in Copenhagen, in 1884, in favor of the contagiousness of the disease, while the latter stated that he had never observed a single instance in proof of contagion. Smirnoff cites the case of a married woman affected with anæsthetic ulcerative leprosy, who had lived with her husband for fifteen years without having communicated the disease to him. Two children were born during a period when the disease seemed to be progressing, both of whom were still healthy at the age of one and two years respectively. The author thinks that this case speaks in favor of Zambaco's and against Hansen's views, and that leprosy is neither contagious nor inheritable.—*Am. Jour. Med. Sciences.*

RELATION OF PHYSICIANS AND DRUGGISTS.

The relation of physicians and druggists, though not so strained as in the days of Sir Samuel Garth, the great London physician who wrote the well-known poem, "The Dispensary," which covered the apothecarles with ridicule, is to-day a question worthy of serious consideration. Then, as now, the druggists to whom the physicians send their patients and prescriptions, are constantly prescribing for these patients, and in many ways injuring the business which belongs to the educated physician, and at the same time maltreating the confiding customers. While I would not advise the organization of physicians to oppose and condemn the druggists, as was done in the latter part of the seventeenth century, yet I do advise every young physician to acquire the habit of dispensing, as far as possible, his own medicines. This is made very easy in these times by the elegant preparations which are sent to us, already compounded by the manufacturing pharmacists; and is also facilitated by the greatly reduced quantity of medicine which is now given. In urging this method upon the young physicians of to-day, I am also speaking in the interests of our patients, whose welfare, both physical and financial, should always be uppermost in our minds. Even the medicine which would cost the physician but a few cents, and could be administered immediately, were the doctor his own dispenser, will cost the poor patient, who takes the prescription to a drug store, a dollar or more, and cause delay, sometimes for hours, in the administration of the

needed drug. Those of us who have, in years of practice, acquired the almost unconquerable habit of writing prescriptions, should see to it that our patients are sent to druggists who are both honorable and educated, and who will not try to substitute their own advice for that of the physician.—*Occidental Med. Times.*

THE WORLD'S FAIR.

In May, 1893, the World's Fair will open in Chicago. Knowing the enterprise, energy and ambition of the citizens of that metropolis, we may reasonably expect it will prove to be the most notable exposition the world has ever seen. This Society should do something to give the visitors at that great Fair a comprehensive idea of the climate of California. Two plans have suggested themselves: 1. To have a large papier-maché model of the State, giving the observer at a glance an idea of our physical geography; showing forests, water-courses, altitudes, and game—showing our health resorts at altitudes of from below sea level, at Indio and Salton, to 10,000 feet above. 2. To offer a prize of $500 for the best article, equivalent to not over 50 pages 12mo, printed matter, descriptive of the climate of California. There would be no trouble in raising money to have such an essay published by the 10,000 copies. It should be as reliable as Euclid, and as entertaining as Don Quixote.—*Occidental Med. Times.*

INTESTINAL DISEASES OF INFANTS.

In an interesting article published in the *Archives of Pædiatrics*, May, 1890, Dr. W. S. Christopher, ably advocates the theory that all the so-called summer complaints are due to ptomaine poisoning. The following is a summary of his conclusions:

1. Various forms of abnormal fermentation occur in the bowels, and when they occur in infants, and produce symptoms, they constitute the immediate cause of the collection of diseases known as summer complaint.

2. Summer complaint so defined includes putrefactive constipation and all forms of diarrhœa and dysentery not diphtheritic in origin nor symptomatic of septicæmia.

3. The three great predisposing causes of summer complaint, viz., hot weather, overcrowding, and bottle-feeding, are to be regarded as acting solely as adjuvants to fermentation.

4. The diet during summer complaint should be determined entirely by the conditions within the bowels, and not by theoretical ideas as to Nature's food.

5. At least two well-marked forms of abnormal intestinal fermentation may be recognized clinically, viz., the putrid and the acid.

6. In the putrid fermentation, carbohydrates should constitute the food, and in the acid form albumen should be the only food.

7. Milk, containing, as it does, both proteids and carbohydrates, should be prohibited in all forms of intestinal fermentation. If properly sterilized, other food can be given; nursing babies with severe summer complaint should be taken from the breast.

8. All food administered, of whatever type, should be aseptic.

9. In addition to regulating the diet on the foregoing principles, the treatment should include laxatives and intestinal antiseptics.

10. The lesions are to be regarded as the results of the fermentation, and are more marked in proportion to the duration of the disease.

11. The lesions assist in prolonging the disease, and in all probability act by providing a habitat for the microorganisms, and by their secretions furnishing the germs with material with which to maintain their biological activity.

12. In chronic cases, where well-marked lesions may be supposed to exist, lavage of the large intestine and of the stomach, with appropriate antiseptics, is indicated.

13. Opium is contraindicated except in persistent acid fermentation which threatens to produce anatomical lesions.—*Medical News.*

OCULAR COMPLICATIONS IN INFLUENZA.

In the February number of the *Recueil d'Ophthalmologie* Dr. Galezowski describes two forms of ocular affection which have been seen by him. In the one the conjunctiva is alone attacked, and the symptoms usually come on at the commencement of the disease. There is pain around one eye, and the lids feel heavy and tend to droop involuntarily, as if the patient were sleepy. Lachrymation and photophobia are frequently present, and the vision fails after a few seconds on attempting to read. In the morning the lids adhere, but there is not much secretion. The vessels of the sclerotic are distended, but the pupil acts perfectly. The author attributes these symptoms to neurosis of the fifth nerve. The other class of case presents a more serious complication, for in it the cornea becomes superficially ulcerated over a large area of triangular shape, the base being towards the circumference, and the apex reaching to the centre of the cornea. The ulcerated area becomes completely anæsthetic, while there is hyperæsthesia of the adjacent corneal tissue. The ulcer tends to increase in size but not in depth. The complication appears late, often during convalescence; the prognosis appears to be favorable. This complication would also seem to be due to some abnormal condition of innervation.

BICYCLING FOR YOUNG PEOPLE.

Dr. B. W. Richardson discusses this subject in a recent issue of the *Æsclepiad*. He admits that since he first warned the public of the dangers of immoderate cycling changes have taken place in the construction both of bicycles and tricycles which materially modify the old drawbacks. He is still, however, of the opinion that cycling should never be practiced by boys and girls, since it differs from other exercises in the fact that it molds the bodily framework, as it were, to its own mode of motion; and riders in course of time almost invariably acquire what he calls "the cyclist's figure," which is not graceful and indicative of the possession of perfectly balanced powers. Of two things, at least, he is satisfied. They are that the temptation of competition is to an earnest and practiced cyclist a "demon of danger," and that the systematic pursuit of cycling should never be fully commenced before the age of twenty-one.—*Weekly Med. Review.*

HYPNOTISM AND SUGGESTION

Prof. Bernheim, of Nancy, gave an interesting demonstration at the Hôtel Dieu, in Paris, a few days ago, of the possibility of suggestion without previous hypnotism. The experiments were performed in the presence of many leading members of the medical and legal professions and several distinguished literary men. Prof. Bernheim was able to elicit from patients, to all appearance in the full possession of their senses, confessions of imaginary crimes, which were confirmed by the suggested testimony of other subjects. He is said to have made them weep or laugh as he bade them, and to have struck them dumb or motionless at will, playing on their nervous system as on an instrument. It is comforting to be assured by Prof. Bernheim that the number of persons whose "stops," as Hamlet says, can thus be governed is exceedingly limited. Possibly when the proceedings are reported in the dry language of science the thaumaturgic element will be less obtrusive than it is in the accounts which have appeared in the lay press.—*The Lancet.*

AMERICAN MEDICAL ASSOCIATION.

Forty-first Annual Meeting, held at Nashville, Tenn., May 20-24, 1890.

GENERAL SESSION.—THIRD DAY.

The President called the Association to order at 10 A.M.

Prayer was offered by Rev. Mr. Cave.

Dr. Briggs presented several communications relative to the business of the day.

Dr. Eugene Grissom, N. C., read the report of the Committee on Nominations, as follows:

For President—Wm. T. Briggs, of Tennessee.

First Vice-President—C. A. Lindsley, of Connecticut.

Second Vice-President—R. C. Moore, of Nebraska.

Third Vice-President—H. C. Wyman, of Michigan.

Fourth Vice-President—L. P. Gibson, of Arkansas.

Treasurer—Richard J. Dunglison, of Pennsylvania.

Permanent Secretary—William B. Atkinson, of Pennsylvania.

Librarian—C. L. Richardson, of District of Columbia.

Trustees of Journal—J. B. Hamilton, District of Columbia; J. V. Shoemaker, Pennsylvania; D. E. Nelson, Tennessee.

Judicial Council—X. Z. Scott, O.; W. F. Peck, Ia.; J. A. Lane, Kans.; J. H. Murphy, Minn.; T. J. Happel, Tenn.; D. J. Roberts, Tenn.; A. Garcelon, Me.

Committee on State Medicine—Ala., Jerome Cochrane; Ark., T. E. Murrell; Cal., W. F. McNutt; Col., P. V. Carlin; Conn., G. H. Pierce; Dak., F. J. Kenyon; Del., L. P. Bush; D. C., J. B. Hamilton; Fla., F. H. Caldwell; Ga., —— Bullard; Ill., H. A. Johnson; Ind., F. W. Beard; Ia., G. F. Jenkins; Kans., W. L. Schenck; Ky., J. N. McCormack; La., J. H. Bemis; Me., T. A. Foster; Md., G. H. Rohé; Mass., S. W. Abbott; Minn., P. H. Millard; Mich., H. B. Baker; Miss., Wirt Johnson; Mo., E. W. Schauffler; N. C., J. H. Tucker; N. J., D. Benjamin; N. Y., E. M. Moore; New Mexico, F. H. Atkins; Neb., J. R. Hazzard; Ohio, N. R. Coleman; Oregon, W. D. Baker; Pa., W. T. Bishop; R. I., H. R. Storer; S. C., Grange Simons; Tenn., J. H. Callender; Texas, T. R. Briggs; Utah, F. S. Bascom; Vt., E. R. Tampbell; Va., H. F. Nelson; W. Va., S. L. Jepson; Wis., B. O. Reynolds; Wash., J. T. Willsey; U. S. A., F. C. Ainsworth; U. S. N., T. Wolverton; U. S. Mar.-Hosp., W. Wyman.

On Necrology.—Ala., J. T. Searcy; Ark., R. G. Jennings; Cal., Winslow Anderson; Colo., W. H. Hawkins; Conn., W. A. M. Wainwright; Dak., F. M. Crain; Del., L. P. Bush; Fla., F. Stuyer; Ga., R. H. Cortelyou; Ill., E. P. Cook; Ind., J. F. Hibberd; Ia., D. W. Crouse; Kans., Levi Horner; Ky., Wm. Bailey; La., J. R. Mattis; Me., A. J. Fuller; Md., D. Street; Mass., H. A. Morley; Minn., W. W. Mayo; Mich., W. B. Alvord; Miss., B. F. Kittrick; Mo., J. M. Jordan; N. C., C. J. O'Hagner; N. J., H. P. Hough; N. Y., N. Jacobson; New Mex., L. Kennon; Neb., D. C. Bryant; Ohio, S. P. Deahofe; Oregon, —— Shackelford; Pa., T. W. Shaw; R. I., —— Chapin; S. C., A. A. Moore; Tenn., C. F. Sim; Texas, W. P. Burts; Vt., M. R. Crain; Va., L. B. Edwards; W. Va., —— Barber; Wash., N. G. Essig; Wis., J. G. Meacham; U. S. A., C. R. Greenleaf; U. S. N., I. W. Ross; U. S. Mar.-Hosp., F. Irwin.

E. L. Shurley, of Michigan, *Address on General Medicine.*

Joseph M. Mathews, of Kentucky, *Address on General Surgery.*

W. L. Schenck, of Kansas, *Address on State Medicine.*

Place of meeting in 1891, San Francisco, Cal. *Time*, first Tuesday in May.

Dr. H. O. Walker, Michigan, moved to amend the report by striking out San Francisco, and inserting Washington, D. C.

Dr. C. Gapen, Nebraska, moved to amend by inserting Omaha.

After some discussion, Dr. E. Grissom called the previous question, which was seconded by twenty members.

The vote being taken on Omaha, it was negatived by 53 to 150.

The vote was then taken on Washington, it was agreed to by a vote of 275 to 10.

The report was then adopted as amended.

Dr. Reyburn then nominated Dr. D. W. C. Patterson as the Chairman of the Committee of Arrangements, and Dr. C. H. A. Kleinschmidt as Assistant Secretary.

Dr. Samuel Logan, of Louisiana, then read the *Address in Surgery.* (See page 773.)

On motion of Dr. Brodie, the thanks of the

Association were tendered to Dr. Logan for his able Address, and a copy was requested for publication.

Dr. E. A. Wood, of Pa., then read the Report on Dietetics. This was followed by the report of the Secretary of the Committee, Dr. Woodbury, Pa. He offered in conclusion, a resolution that the word physiology be stricken from the Section 1, and a new Section, entitled the Section on Dietetics and Physiology be formed.

The report was adopted and the amendment laid over till next session as required by the By-laws.

Dr. P. H. Millard, of Minn., presented a Report of the work done by the National College Organization. He offered the resolutions as adopted almost unanimously by the College Association.

1. That the colleges represented in this Association adopt three graded courses of not less than six months each, no two courses to be given in the same year.

2. That both oral and written examinations be required of all students.

3. That laboratory instruction in chemistry, histology and pathology be required.

4. That the colleges belonging to this Association demand the following examination of all applicants for matriculation: 1. A composition in English of not less than 200 words. 2. The translation of easy Latin prose, or, in lieu thereof, an examination in either German, French or Scandinavian languages, provided that students be allowed one year to make up any deficiency in this part of the examination. 3. An examination in higher arithmetic. It is provided, however, that candidates who are graduates or matriculates of recognized colleges of literature, science and art, or of normal schools supported by the different States, are to be exempt from the provisions of this examination.

On motion of Dr. J. V. Shoemaker, of Penna., the Association accorded a hearty approval of the report and resolutions.

Dr. S. P. Moyer, of Ill., offered the following:

Resolved, That at future meetings of this Association the business of the general sessions shall be conducted from the floor of the house, and no one occupying a seat on the platform shall be recognized by the President, excepting the Secretary; providing, however, that nothing in this resolution shall be construed as preventing the Chairman from inviting members to address the Association from the platform.

A motion to lay the resolution on the table was negatived.

Dr. N. S. Davis offered to amend by adding the Chairman of the Committee of Arrangements, which was adopted by the mover of the original resolution.

After some further discussion it was adopted.

Dr. Comegys, of Ohio, was allowed the floor to explain his action of yesterday. The President acknowledged that he had misunderstood his remarks, and asked him to restate his motion. After explanations by Dr. Shoemaker and others, Dr. Davis demanded the order of the day.

The President announced as the Committee on his Address, as ordered by special resolution, Drs. W. L. Schenck, Kans.; Benj. Lee, Penna.; T. B. Evans, Md.; E. Grissom, N. C., and H. B. Baker, Mich.

On motion of Dr. Davis the Association adjourned till 10 A. M. on Friday.

FOURTH DAY.

The President called the Association to order at 10 A. M.

Prayer was offered by Rev. Dr. Lofton.

The Permanent Secretary read a number of announcements relative to the railroads, etc.

Dr. Carroll being absent, on motion of Dr. Brodie the *Address on State Medicine* was read by title. (See page 754.)

The list of delegates abroad was read by the Permanent Secretary, and will be published in an early issue of THE JOURNAL.

On motion of Dr. Brodie the President and Permanent Secretary were authorized to appoint additional delegates to the Tenth International Medical Congress and the British Medical Association and the Canadian Medical Association.

Dr. Shoemaker inquired if all those named were members in full standing of this body. Time did not allow of the present examination of the roll of members, and therefore he moved that credentials be issued only to such as appeared on the list of membership. Carried.

On motion of Dr. Brodie it was resolved,

That at the next meeting of the Association, to be held in Washington the first Tuesday in May, 1891, the Chairman of the Committee of Arrangements is hereby instructed to have tickets of admission to the first two meetings prepared, which shall be given the members upon the payment of his annual dues, the same to be shown at the door to a person appointed for that purpose.

Dr. Woodbury suggested that tickets of a different color be issued to the delegates who alone have a right to vote, and that a part of the hall be set aside for them. After some discussion this proposition was rejected.

Dr. Brodie offered a resolution prohibiting the placing of books and other advertising sheets on the seats, when Dr. J. H. Hollister offered the following, which was accepted by Dr. Brodie:

WHEREAS, Certain parties without authority are presuming to make use of this Association for the furtherance of advertising interests, therefore

Resolved, That at all future meetings of the Association such publications be excluded from the place of meeting either of the General Sessions or of its Sections.

Resolved, That in the future each Chairman of the Committee of Arrangements be directed to procure a copyright of the Official Programme, to the end that the financial rights of the Association may be protected by due process of law.

This was unanimously adopted.

Dr. J. C. Culbertson, of Ohio, offered the following amendment to the by-laws:

That the State and Geographical District Societies in affiliation at this time with this Association, having a membership of one hundred or more, shall be recognized as branches of the American Medical Association.

That all members of said societies enjoy all the rights and privileges now accorded the delegates.

Resolved, That the said organizations be overtured, through our Permanent Secretary, to take such action as will enable them to concur in these suggestions.

Dr. Hollister moved that it lie over for action at the next meeting. Adopted.

Dr. W. H. Daly, of Penna., offered an amendment, as follows:

That in future the permanent members have all the rights of delegates.

Laid over.

Dr. J. M. Toner, of D. C., offered the following:

WHEREAS, It is fitting that the American Medical Association should take proper notice of the Centennial of the Discovery of Vaccination, by Dr. Jenner, as a protection against small-pox, which will occur in a few years; therefore, to the end that due and timely consideration be given to the subject,

Be it resolved, That the President of this Association be empowered to appoint a committee, to consist of one physician of recognized ability from each State and Territory of the United States, to consider the whole subject and report a practical scheme which shall bring the century of the practice of vaccination in this country under review, and in such study secure the expression and co-operation of the medical profession residing in every part of our country, old and new, and report, with recommendations as to the scope and methods to accomplish this, to the next meeting of this Association, for its consideration and adoption.

The resolution was seconded by Dr. N. S. Davis and unanimously adopted.

Dr. I. N. Love announced the death of Dr. Jackson, First Vice-President, and on his motion the President appointed the following committee to take suitable action: Drs. I. N. Love, J. B. Hamilton and W. Brodie.

The committee reported as follows:

Resolved, That the American Medical Association desires to express its great sorrow in the knowledge of the death of its First Vice-President, Dr. John W. Jackson, of Missouri.

That the sympathy of the Association is extended to his family.

(Signed) I. N. LOVE,
J. B. HAMILTON,
W. BRODIE.

The resolutions were adopted.

The Permanent Secretary read the following:

E. M. MOORE, PRESIDENT AMERICAN MEDICAL ASSOCIATION.

Dear Doctor:—Finding myself so circumstanced as to be unable to give that attention to the publication of THE JOURNAL of the Association which I deem it is proper a Trustee should do, I therefore feel constrained to request that my resignation of the responsible position of Trustee be accepted. Very respectfully,

J. M. TONER.

On motion of Dr. Brodie the resignation was accepted.

Dr. Brodie moved that the vacancy be filled by Dr. E. M. Moore, of N. Y., the retiring President.

Dr. J. F. Hibberd, of Ind., was also named.

After some remarks a vote was taken by the Permanent Secretary, and he announced that Dr. Moore had been elected.

The following action of the Tennessee State Druggists' Association was read:

TO THE AMERICAN MEDICAL ASSOCIATION.

Gentlemen:—The Tennessee State Druggists' Association has delegated us to present to your honorable body a question, the importance of which to your profession, as well as ours, can hardly be overestimated, and we place it before you with the hope that it may receive at your hands the weight it merits.

The resolutions adopted by the Tennessee Druggists' Association are as follows:

Resolved, That a committee of three be appointed to lay before the American Medical Association the great and growing evil of prescribing secret and proprietary preparations by many members of the medical profession; that many of such preparations are glaring frauds, the formulæ often stated on the labels are misleading, if not fictitious, and that all such preparations should be classed as secret proprietary, or patent medicines, and that the American Medical Association be petitioned to declare it against its code of ethics for any member of that body to prescribe any such preparation; that the Association be requested in every possible way to discourage their use, as in prescribing these nostrums the medical practitioner is really playing into the hands of quackery, thus teaching his patient to dose himself, and that the use of such nostrums is utterly unscientific and unbecoming a profession striving after exact methods, is unworthy our age, and against the best interest alike of the professions of medicine and pharmacy, as well as their patients and patrons.

While these resolutions might suffice, we trust a few words in explanation will be allowed. It may be needful to emphasize a few facts possibly overlooked by the busy practitioner.

Have you ever given the published formulæ of these preparations serious thought? Say listerine, a very popular proprietary remedy, the claim of its composition, *benzo boracic acid, mentha avenis*, etc.?

Now, benzo-boracic acid has no existence, and for a solution of boracic acid, flavored, is it right that you should make the druggists charge one dollar per bottle? Has it never occurred to you that a solution of boracic acid would do all that listerine ever did? Or, for instance, have you given the published formula of bromidia due consideration? Can extract canabis indica be held in solution in an aqueous nostrum? Would not a solution of chloral and potassium bromide, in the proportions indicated, always serve the purpose? Also, is not pinus canadensis, colorless, simply a solution of sulphate of zinc? Tasteless syrup of quinine, 2 grains to the teaspoonful? The label boldly lies to you, as it has been shown not to contain any quinine at all. But as the most perfect type of these fraudulent preparations let us present to you "Phosphorized Cerebro-Spinant, Freligh's Tonic, registered, copyright secured," and quoting its label: "Those familiar with the action of drugs know the homogeneous relation they bear to each other, how their *pathogenetic and curative spheres* are enlarged and dynamatized by a judicious combination." Can charlatanism go further, and should any doctor rely upon such statements? Yet many eminent physicians prescribe Freligh's Tonic; medical editors accept its advertisement and recommend it. The result is you are not getting what you purpose to prescribe, and form incorrect conclusions as to the therapeutic value of the remedial agents intended to be employed, are helping to undermine the very foundation of scientific medication, and aiding in building up a class of manufacturers whose methods are unscientific and unprofessional, and are endeavoring to obtain endorsement through fair means or foul. We fully appreciate that many of these preparations have been employed, if not thoughtlessly, as a matter of convenience and in good faith; yet you have at the same time given an impetus to self-dosing and taught

your patient the use of many ready-made cures, many of which—as Fellow's Syrup, Pond's Extract, Horsford's Phosphates, etc.—are duly advertised not only in newspapers, street posters, etc., but also in prominent medical journals.

Yet, gentlemen, many eminent physicians and college professors have done much in extending this unwise and injurious practice of self-medication.

These few salient points are submitted for your earnest consideration. One State association has already taken a step in advance. At the last meeting of the State Medical Society of Arkansas, on motion the Committee of Arrangements was instructed to prohibit the exhibition of secret proprietary articles in connection with the meetings of this society.

Gentlemen, we leave this very important matter in your hands. Yours respectfully,

(Signed) AL. A. YEAGER,
STACEY LORD,
A. A. KLEINSCHMIDT,
Committee.

On motion of Dr. W. H. Daly, of Penna., the communication was received and ordered to be printed in THE JOURNAL, and the thanks of the Association sent to that body for bringing these important questions to our notice.

Dr. F. Woodbury, of Pennsylvania, presented the following:

Your Committee appointed to confer with a Commitee of the American Pharmaceutical Association, respectfully reports that it has performed the duty assigned to it, and recommends that the following resolution be adopted and the Committee discharged:

Resolved, That the words Materia Medica be taken from the title of Section I, and that a new Section be formed, to be entitled the Section on Materia Medica and Pharmacy, to have the same privileges as other Sections of this Association.

All of which is respectfully submitted.

(Signed) FRANK WOODBURY, Chairman,
G. E. FROTHINGHAM,
J. C. CULBERTSON.

On motion the report was adopted and the amendment to the laws adopted unanimously.

Dr. F. Woodbury was named as Chairman and Dr. W. G. Ewing, of Tennessee, as Secretary of the new Section.

The following from the Illinois State Medical Society was read:

Resolutions passed by the Illinois State Medical Society at the annual meeting held in Chicago, May 6, 7 and 8, 1890.

1. That at the World's Columbian Exposition to be held in Chicago in 1893, there should be such an exhibit as will represent the history and present status of the medical and allied sciences.

2. That this Society hereby requests the American Medical Association, as the largest and most representative organization of medical men in this country, to take the initiative and inaugurate such measures as will conduce to secure a creditable exhibit.

On motion, it was resolved that this Association will take action in accordance with these resolutions.

The Committee on Coroners reported as follow:

REPORT OF COMMITTEE ON CORONERS.

Your Committee appointed three years ago upon the revision of the coroner laws of the United States, beg leave to submit the following report:

That they have examined carefully the laws of the various States, and in their first published report, pointed out the great need of a revision of the entire system of laws regulating the interests so vital to the public which are in most of the States relegated to the Coroner. They also pointed out that too often the office was considered a political one, and as such was frequently held by persons utterly incompetent. That the system as generally practiced was one, in the present state of our civilization, neither economic of the public funds, or conducive to the higher ends of justice. They cited the experience in certain States, where for some years (Massachusetts and Connecticut for example), the entire system had been revised, the coroner office, as such, abolished, the legal functions placed under the care of properly educated men, and the medical duties relegated to specially trained experts, called *Medical Examiners*. Your Committee made a report of progress at the last annual meeting, and now would ask to submit the following recommendation for your consideration and approval:

Resolved, That the American Medical Association respectfully call the attention of the various State Boards of Health to the subject of a careful revision of the coroner laws, and be requested to take an active interest to secure such legislation as, in their judgment, may seem best to accomplish this purpose. HENRY O. MARCY,
W. W. DAWSON.

On motion, the report was accepted and the resolution adopted.

A motion to substitute State Medical Societies for Boards of Health was negatived.

A report on the President's Address was offered, but as no signature was attached, on motion of Dr. Brodie the subject was recommitted till next year.

The Permanent Secretary read the Report of the Treasurer:

REPORT OF THE TREASURER.

The Treasurer has the honor to report a balance in the Treasury of $4,703.20, as shown by the itemized statement which will accompany this report, and will be published at length in THE JOURNAL of the Association for the information of members.

All of which is respectfully submitted.

RICHARD J. DUNGLISON, Treasurer.

May 22, 1890.

On motion it was accepted.

Dr. Silas D. Presbrey, of Massachusetts, after an allusion to the work and long continuance in office of the Permanent Secretary, offered a vote of thanks to him.

Dr. Love moved to appropriate $500 as an honorarium.

After a statement by Dr. Toner that all such motions must be referred to the Board of Trustees of THE JOURNAL, Dr. Love withdrew the motion.

Dr. Wm. H. Daly renewed the motion, and to give $100. A motion to refer this to the Trustees was lost and the matter rested there.

The Permanent Secretary read the following as the Officers of the Sections as far as they had been reported:

Practice.—V. Vaughan, Michigan, Chairman; G. Dock, Tennessee, Secretary.

Surgery.—Theo. McGraw, Michigan, Chair-

man; J. B Deaver, Pennsylvania, Vice-Chairman; W. E. B. Davis, Alabama, Secretary.

Obstetrics.—No report.

State Medicine.—J. D. Plunkett, Tennessee, Chairman; C. A. Ruggles, California, Vice-Chairman; F. S. Bascom, Utah, Secretary.

Ophthalmology, etc.—Leartus Connor, Michigan, Chairman; T. E. Merrill, Arkansas, Secretary.

Otology, etc.—No report.

Diseases of Children.—W. Perry Watson, New Jersey, Chairman; H. A. Hare, Pennsylvania, Secretary.

Medical Jurisprudence, etc.—No report.

Dermatology, etc.—L. D. Bulkley, N. Y., Chairman, W. T. Corlett, Ohio, Secretary.

Oral Surgery.—No report.

On motion the Secretary was directed to communicate with these Sections, and obtain the names of their officers.

Votes of thanks having been offered by several members, on motion of Dr. J. V. Shoemaker, of Penn., it was

Resolved, That the American Medical Association wishes to express its high appreciation to the Chairman of the Committee of Arrangements, and to the profession of Nashville, for the efficient arrangements during the meeting of the Association in their city.

Resolved, That the Association tender thanks and warm appreciation especially to Dr. W. T. Briggs and Mrs. Briggs, Dr. and Mrs. Richardson, Mr. and Mrs. Wilson, Mrs. Polk, Prof. and Mrs. Hancock, Mrs. Connelly, Mrs. Watkins and sister, General Jackson and the ladies Committee, and the citizens of Nashville, for their cordial reception and handsome entertainments given to the members of the Association.

Resolved, That we return thanks to the newspapers, the Clubs of Nashville, and the railroad companies of Nashville, who so generously extended their courtesy to our members.

In addition to such sentiments, Dr. Moore, the retiring President, said: "The wives and daughters of the members of the American Medical Association, who have visited Nashville at the present time, desire through me, to express their heartfelt thanks for the unbounded hospitality of which they have been the recipients at the hands of the ladies of this beautiful city. The charming grace with which this has been dispensed will ever remain as one of our most delightful memories."

Dr. N. S. Davis eloquently joined in the tribute to the ladies and the profession of Nashville, and the resolutions were adopted amid great applause.

The retiring President then introduced the President-elect, Dr. Wm. T. Briggs, who in a brief address expressed to the members his high appreciation of the honor they had done him.

On motion of Dr. Brodie the thanks of the Association were given Dr. Moore for his performance of the duty of President.

The President then declared the Association adjourned until the first Tuesday of May, 1891.

WILLIAM B. ATKINSON,
Permanent Secretary.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Dr. Bernheim and Hypnotism—Somnal—Ambulance Service—Dr. Gervis on Puerperal Fever—The Leprosy Committee.

The event in the scientific world is Dr. Bernheim's demonstration at the Hotel Dieu, that suggestion does not depend on hypnotism. Dr. Bernheim heads the Nancy school as opposed to the Paris or Charcot school. He experimented in the presence of most of the medical staff, the leading judges d'instruction, advocates, and of M. Dumas *fils*, who came to see to what degree his father's intuitions would be borne out. None of the patients knew anything of Bernheim nor had any idea why he came among them. Each set was taken in a different ward from the other. The Nancy scientist who first discovered this power in a common man, made suggestions to the patients in a state of natural sleep, and then to waking ones. Without trying to hypnotize them he was able to strike them dumb, to paralize their limbs, to make them weep, go into fits of laughter. What chiefly interested the legal part of the audience was the evidence the subjects gave as to imaginary events in which belief was suggested. They were circumstantial, consistent, and not to be shaken. Dr. Bernheim's power has, however, decided limits. It has no action on persons in a thoroughly healthy state.

Sleepless humanity has of late received an inordinate share of attention from inquirers of the therapeuto-pharmacologist class, and the number of hypnotics now before the profession is so great that the old-fashioned maxim "If you can't cure the man, put him to sleep," ought to be a comparatively easy matter, if an ample variety of choice has anything to do with it. Somnal, one of the very latest of these new narcotizers, appears to have already won golden opinions in Continental practice, and in two instances where it has been privately tried in this country, the results are stated to have been eminently satisfactory. Somnal is an actual combination (and not a mere mixture) of alcohol, urethrane and chloral. Crystals of this body are obtainable, but they are somewhat unstable, and very deliquescent when exposed to the air, so that a saturated solution in alcohol is the form in which the compound is supplied, the name "somnal" being applied to this solution. The dose is an average of half a drachm. This takes effect in from twenty to forty minutes after administration, and induces a sound, undisturbed sleep, which continues for seven or eight, or sometimes as long as ten hours. The awakening is stated to be quite "natural," and no after ill effects are

caused by this drug. In cases of insomnia from nervous depression or cerebral "shock," and also of acute neuralgia, somnal has been found extremely useful. There are stated to be doubts as to the real state of "combination" of the alcohol in this new preparation, which probably may be more a sort of chloral-urethrane which has itself been separately brought forward as a hypnotic.

Through the instrumentality of the Hospitals Association, an effective ambulance service for the transport of persons injured or suddenly stricken with illness in the London streets has been organized, and its completion in all its details will speedily be accomplished. The metropolis has been mapped out into districts on the basis of the police divisions, and 152 ambulances will be provided, including the fifty-eight already at the police station. For the additional number stations have been secured in suitable localities free of expense. After three month's trial conducted by the police and the hospital authorities a new form of ambulance has been decided upon. It will consist of an iron frame upon three bicycle wheels with India-rubber tyres, and will be furnished with the requisite appliances for rendering "first aid" to the injured. Already forty ambulances have been placed within the four mile radius, twenty being at fire brigade stations, fifteen at hospitals, four at industrial dwellings, and one at Holborn circus, and in a short time eighteen more will be supplied to cab-ranks. The cost of the service estimated at £300 per annum will be defrayed by subscriptions. Considering that four people are killed weekly in the streets of London, and a score or two injured, provision of this order is a work of real humanity.

Dr. Gervis speaking of puerperal fever, said that thirty years ago nothing was known about it. Nothing he considered had added more to the comfort of practitioners than the knowledge of the nature and treatment of these cases. In the great majority of cases septicæmia did not occur without local trouble, and very commonly evidence of this would be found near the outlet if carefully sought for, especially a perineal laceration, which must be treated with antiseptic solution. Pelvic pain was no safe guide to local mischief, considerable parametric swelling might be found on one side when pain was absent. Pelvic inflammatory mischief was the usual precedent to puerperal septicæmia. Curetting the uterus in these cases would need great caution. Dr. Gervis thinks that the uterus should not be washed out unless there were distinct reason to believe that septic matter was inside it, but he had long made a practice of sponging out the genitals with an antiseptic solution and ordering a daily vaginal douche. He thought that by these proceedings puerperal fever might be in time, prevented from occurring. Scarlatina might lead indirectly to septicæmia by leaving surfaces on the tonsils which would give ready entrance to specific germs.

The belief in witchcraft has not quite died out in rural England. At a recent inquest in Suffolk on a female child, æt. 11 weeks, the father and mother stated that they believed death was due to the witchcraft of the child's grandmother. This woman died a few hours before the child, and stated that the child would not live long after her. The child was taken out in a perambulator, and the father stated that he saw smoke arise from the perambulator, and that the child died upon being taken home, the mother stating that it was hot and dry, and smelt of brimstone. The husband of the deceased woman said he was of the opinion that his late wife had the powers of a witch, and he always tried to do what she wanted in consequence. Medical evidence showed that death was due to natural causes.

The leprosy committee, which was some time ago appointed by the Prince of Wales, continues its meetings at Marlborough House, the Presidents of the Royal Colleges of Physicians and Surgeons, and others taking part in the development of a plan for the scientific study of the disease. Of the £12,000 which it is desired to raise upwards of £7,000 has been subscribed. It is proposed to send surgeons trained to scientific investigation to Hawaii, Persia, and India, to collect evidence which will tend to give precision to the knowledge of the cause of the disease and its mode of transmission, and furnish data for preventing its extension.

The "new disease" which was recently discovered in Northern Italy, proves to be cases of ordinary small-pox with well marked prodromal rash.

In a previous letter referring to some statistics with regard to chloroform administration at St. Bartholomews Hospital, the verdict was given in favor of ether and not as inadvertently stated.

G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Fallacy of the So-called Hot Air Treatment of Phthisis—The First Annual Reunion of the Alumni of Bellevue Hospital—Dr. Alfred L. Carroll's Course of Lectures on Hygiene and Public Health—The cause célèbre of Kemmler—Reform in the Management of the Insane.

Dr. W. Gilman Thompson, Professor of Physiology in the University Medical School, has read before the Academy of Medicine a paper on "The

Fallacy of the So-called Hot Air Treatment of Phthisis" which ought to have a good effect on the profession and public of this country by exposing the untenableness of the claims put forth for the method in question. That this method is being practiced to a very considerable extent, is evident from the fact that a large establishment is being maintained in this city for the manufacture and sale of the hot air apparatus. This establishment, known as the "Dr. Louis Weigert Company," is scattering broadcast over the country a pamphlet entitled, "Proofs that Consumption can be Cured," which advertises, with various eulogistic letters and newspaper notices, the merits of a cheaper and improved form of the patent "Perfection Hot Air Medicine," the use of which it recommends in consumption, asthma, chronic bronchitis, and various nasal and laryngeal affections.

Dr. Thompson stated at the outset that he had had no practical experience with hot air inhalations in the treatment of phthisis, but he had been much interested in the reports of various observers concerning it; and before giving the results of his own experimental investigations he proceeded to give a *résumé* of what has been written in favor of and against the method during the last two or three years. In the course of this he referred to the exhibition of the Weigert apparatus before the Section on Practice of the Academy of Medicine in February, 1889, by Dr. A. L. Stern, and quoted from the comments of THE JOURNAL on the claims of Weigert and Stern, as presented at that time.

The only observers, he said, who had made a thorough report of the relative number of bacilli present while the patients were under treatment, were Drs. Sears and Trudeau, and they both agreed that there was no material deviation from the average. Trudeau, who, during the progress of his cases, made cultures of the bacilli, and also injected the sputa of his patients into rabbits at regular intervals of five weeks, arrived at the conclusion that the evidence obtained by the bacteriological study of these cases did not confirm the assumption that inhalations of heated air can either prevent the growth of the tubercle bacilli in the lungs of living individuals or diminish the virulence of the microbe when it has gained access to them. The alterations in symptoms reported by the various observers were no argument, he thought, in favor of the hot air treatment. None of these changes were of a very decided type, and any one accustomed to deal with cases of tuberculosis was familiar with the frequent slight changes met with in the course of three or four months, and which were readily explained by variations in diet, hygiene, environment, etc. It was also well known, he said, that the faith which many patients reposed in any new treatment often worked a temporary improvement in their condition. Again, in many instances the patients, in addition to the inhalations, were taking creosote and other remedies. Moreover, the lung gymnastics necessitated by deep inhalation might, in certain cases, have been of benefit by expanding the lungs more fully; thus increasing tissue change in various ways quite independently of any additional heat.

In referring to the immunity from tuberculosis of men exposed to high temperatures at lime-baking ovens, as alleged by Halter, he said that the immunity did not seem to extend to stokers, who inhale equally hot air. The very high speed recently developed by the transatlantic steamers had been attended by considerable loss of life among the stokers. A few months ago one of these men came under Dr. Thompson's care at the New York Hospital, suffering from a very acute pulmonary tuberculosis which had developed while he was at work in the boiler-room of an "ocean greyhound," and the surgeon of the same steamer had stated that in his experience such cases were becoming more and more frequent among the stokers employed in the very hot atmospheres.

The only observers, he said, who thus far had attempted to ascertain, before keeping their patients sucking at a hot air tube several hours daily for months at a time, whether the heated air really does enter the lungs without losing its heat, were Drs. Moss and Rondelli, of Turin. They separated two simple air chambers by a moist membrane, and succeeded in cooling air from 382° to 76° by evaporation in its passage through the membrane from one chamber to the other. They next allowed a dog to inhale air heated to 320° for fifteen minutes, while thermometers inserted in the trachea and bronchi respectively showed practically no difference in temperature. The rectal temperature also remained normal. Dr. Thompson said that the experiments of Moiso and Rondelli were entirely unknown to him until after his own had been completed, and that he was pleased to find that their results were in perfect accordance with those which he had himself obtained. He was desirous of undertaking an experimental investigation because he could not believe, upon theoretical grounds, in the advantages claimed for inhalations of hot and of cold air.

The theoretical objections presenting themselves to him were the following: 1. We are not accustomed to find any important changes in body temperature or in the character of the respiration in those who work in great heat, nor in those who are exposed to arctic cold.

2. The widest variation of body temperature admitted by physiologists to occur in those who exchange an arctic for a tropical climate does not exceed ½ to 1 degree, and even this is not constant.

3. Very hot air in contact with the mucous membrane of the nose, mouth, pharynx and larynx will destroy their epithelium, and produce painful swelling and congestion.

4. If it could reach further it would cause destruction of the ciliated epithelium of the bronchi, and the delicate cells lining the air sacs would be destroyed and desquamated.

5. It would cause dangerous capillary congestion of the lungs.

6. The bacilli are many of them buried in the large tubercular masses. It is not probable that if the hot air could enter the bronchioles or air sacs, it could reach more of the bacilli than such as were by chance contained in the sputa. To reach their real foci sufficiently heated to destroy them the hot air must warm the surrounding blood.

7. Blood serum albumen is coagulated at various temperatures according to the reaction of its evolution and the relative amount of salts present. It may coagulate at as low temperature as 122° or as high as 163°. The myosin in the muscles of the trachea and bronchi is coagulated at 131°–140°. The protoplasm of the various cells and blood corpuscles would all be hopelessly injured by the heat.

8. The blood itself, unless the pulmonary vessels were greatly congested and the heart's action much enfeebled, would tend to carry off the heat of the air very rapidly. An enormous surface of blood is exposed in the lungs which is constantly being replaced by each cardiac pulsation by fresh quantities of blood unheated by the air and ready to absorb more heat units before they can accumulate sufficiently to damage either bacilli or protoplasm.

9. The natural process of vaporization of the water from the mucous surface is amply sufficient to absorb all the heat units that can be brought to the bronchi by the super-heated air.

10. Only about one-tenth of the air in the lungs is exchanged with each respiration.

In the face of all these well known considerations he said it was very difficult to believe that any one could expect for a moment to fill the lungs during life with air hot enough or cold enough to kill bacilli. His experiments were therefore directed to determine: 1. How far can hot and cold air respectively be made to convey heat or cold into the air passages. 2. The influence of evaporation upon heat loss. 3. The influence of conduction and radiation upon heat loss. 4. Any changes, in body temperature, either local or systemic, produced by the inhalations in question. He employed a simple apparatus consisting of an iron pipe eleven feet long, bent with a close coil three inches in diameter, beneath which were placed several powerful Bunson burners. Air was forced through one end of the coil in a continuous current from a large treadle reservoir bellows, and from the opposite end the iron pipe was bent out straight for eight inches, and connected with an inhaler made to fit tightly over the head of the animal to be experimented on. The inhaler had a valve which prevented the inhaled air from entering the coil, and this air passed out through a lateral opening in the inhaler. A thermometer was placed in the inhaler close to the animal's nose, and another one six inches distant in the tube leading from the coil. The animal having been anæsthetized, thermometers were placed in the lungs or trachea, or both, through small openings which they fitted so closely as to make the holes air-tight.

Dr. Thompson then proceeded to give the details of a considerable number of experiments on cats and dogs, with inhalations of both hot and cold air. The latter, he said, had recently been suggested for the control of pulmonary hæmorrhage by Dr. Tullio, of Naples, who claimed to have checked three severe cases after failure with other means, such as drugs, ice to the chest, etc. For the cold inhalations he used the coil imbedded in a mixture of snow and salt; the bellows being operated outside the window in an atmosphere of 27°. In this way the air, after passing through the coil, registered less than 40° at the nose. The conclusions he derived from his experiments were as follows:

1. Continuous inhalation of air heated from 200° to over 300° at the nose does not raise the temperature of the lung at all in some cases, even when maintained for an hour or more.

2. In other cases, if continued for an hour and more, there may be a slight rise of temperature of from 2° to 4°, due to various causes other than the entrance of hot air into the alveoli.

3. The temperature of the trachea under corresponding conditions rises only from 4° to 6°.

4. Cold air does not affect the temperature of the trachea and lungs any more than hot air, and is, therefore, equally useless as an inhalation for any clinical purpose whatever. No one, he said, would think of controlling capillary oozing on the surface of the body by reducing the local temperature only one or two degrees, since it often took a prolonged direct application of ice to produce sufficient vaso-motor stimulus to control hæmorrhage, and even this frequently failed in post-partum hæmorrhage.

He believed the following conditions combined to secure a uniform mean temperature of the air in the lungs and to prevent the entrance of superheated air as such: The great vascularity of the pulmonary tissue; the extensive surface of the air sacs and blood vessels; the slow diffusion of the tidal with the residual air; the uniform temperature of the blood; the remarkable heat regulating mechanism of the entire body, which constantly tends to prevent local increase of temperature through the agency of a very rapid blood

stream; the low specific heat of water and of blood, which is so largely composed of water; the large quantity of blood in constant circulation; the enormous number of heat units rendered latent by vaporization of water; the ease with which water can be drawn from the blood plasm to the surface of mucous membranes, and the slight conduction of heat by the body tissues.

In conclusion he remarked that there are undoubtedly many physiological experiments in regard to which we ought not to reason too closely from the lower animals to man; but it seemed to him that the experiments which he had reported were of a type which must necessarily apply to man as truly as to the lower animals, because they were based upon the laws of physics. They also, he thought, found one more illustration of the great value of vivisections conducted with the object of preventing the employment of methods powerless for the relief of human diseases, the ignorant use of which could only bring great discomfort and loss of time to the patient.

An event of great interest recently was the first annual reunion of the Society of the Alumni of Bellevue Hospital, which was held in connection with the thirty-second monthly meeting of the society during the second week in April. On Tuesday evening, at the Mott Memorial Hall, Dr. Chas. Phelps read a paper on "The Treatment of Simple Fracture of the Patella by Wiring," in which he presented the results of over fifty cases, and among those who took part in the discussion were Drs. Markoe, Bryant, Dennis, Lange, McBurney, Leale, Abbe, Fluhrer, L. A. Stimson and Stephen Smith. On Wednesday morning Dr. Lewis A. Sayre held one of his characteristic and instructive clinics on orthopædic surgery in the amphitheatre of Bellevue Hospital, and in the afternoon, at Mott Memorial Hall, the following papers were read: "Ultimate Results of Injuries to the Hip," by Dr. Reuben A. Vance, of Cleveland; discussion by Drs. F. Hartley, L. W. Hubbard, R. H. Sayre, J. McG. Woodbury and J. A. Wyeth. Discussion on "Transient Glycosuria and Delicate Tests for Sugar in the Urine," introduced by Drs. Brandreth Symonds, of the New York Life Insurance Company, and John Warren, of the Equitable Life Insurance Company, and continued by Drs. H. M. Biggs, A. Flint, G. B. Fowler, R. W. Greene, A. Jacobi, E. G. Janeway and J. W. Roosevelt. In the evening a banquet was held at the Hotel Brunswick, at which toasts were responded to by Bishop Quintard, of Tennessee, Drs. W. H. Draper, Austin Flint, A. L. Loomis, W. M. Polk, and others. The session was brought to a close by an obstetrical and gynecological clinic by Dr. W. T. Lusk on Thursday at Bellevue Hospital.

The course of lectures on Hygiene and Public Health, arranged by the managers of the Mott Memorial Library, is being well received. The lecturer, Dr. Alfred L. Carroll, who is recognized as one of the most accomplished members of the American profession, is especially well qualified to give such a course by his experience, for a number of years, as Secretary of the New York State Board of Health. Dr. Carroll, who for a long time resided at New Brighton, Staten Island, has recently resumed practice in this city.

The *cause célèbre* of Kemmler, the first murderer ever condemned to die by electricity, has now reached its final stage. The execution was postponed for many months by the efforts of the counsel for the prisoner to prove that the act providing for the carrying out of the death penalty by means of electricity was unconstitutional, on the ground that it is a "cruel and unusual" punishment; but the Court of Appeals has at last unanimously decided that the law is constitutional, and Kemmler has been sentenced anew. In concluding the opinion of the Court, Judge Daniel, who rendered it, says: "The decision of the Legislature is conclusive upon the courts. The amendment to the code making the new penalty is not in general purpose or intent a violation of any provision of the Constitution. The testimony taken by the referee, while not impeaching the validity of the Legislature's acts, is a valuable collection of opinions, but nothing more. The Court finds that the mode proposed is not cruel within the meaning of the Constitution, though unusual. On the contrary, all agree with the Court below that it removes every reasonable doubt that the application of electricity to the vital parts of the human body under such conditions and in the manner contemplated by the statute, must result in instantaneous and, consequently, painless death."

The friends of reform in the management of the insane and of humanity in general are jubilant over the passage, by the Legislature, of the new law which transfers all the pauper insane from the county poor-houses, where they are at the mercy of ignorant local officials and subject to all sorts of abuses, to the care of the State in institutions affording facilities for the best modern scientific treatment. This is a triumph after a long struggle, as the State Charities Aid Association, backed by the medical profession, has been striving to get such a bill passed for a number of years, but has always hitherto failed. The act applies to all the counties of the State except New York and one or two others. P. B. P.

MISCELLANY.

LETTERS RECEIVED.

Dr. B. C. Anderson, Beardstown, Ill.; Dr. N. D. Guerry, Trinity, Miss.; Dr. Wm. H. Dukeman, Los Angeles, Cal.; Dr. John B. Crowly, Sullivan, Ind.; Dr. Maris Gib-

son, Wilkesbarre, Pa.; Robt. P. Porter, Supt. of Census, Washington, D. C.; Dr. H. T. Rennolds, Baltimore, Md.; Dr. Wolfred Nelson, New York; Dr. B. M. J. Conlin, Alexandria, S. D.; Dr. M. T. Zellers, Hooper, Neb.; Dr. John B. Hamilton, Washington, D. C.; The Therapeutic Analyst, Norwich, Conn.; Dr. J. C. Culbertson, Cincinnati, O.; P. J. McCauley, St. Louis, Mo.; Dr. H. Reynolds, Livermore Falls, Me.; Medical Herald Co., St. Joseph, Mo.; I. Haldenstein, W. P. Cleary, New York; Dr. S. C. Ayres, Cincinnati, O.; Dr. Clarke Gapen, Omaha, Neb.; Dr. D. G. Trembley, Mace, Ind.; Horace A. Brooks, Salem, Mass; H. Soule, Ann Arbor, Mich.; Thos. Leeming & Co., New York; Dr. J. H. Musser, Philadelphia, Pa.; A. J. Hoon, Mercer, Pa.; Dr. I. P. Klingensmith, Blairsville, Pa.; Dr. E. A. Cobleigh, Chattanooga, Tenn.; Dr. H. H. Mudd, St. Louis, Mo.; Dr. G. E. Humphrey, Galveston, Tex.; Dr. Wm. Pepper, Philadelphia, Pa.; Dr. J. M. French, Cincinnati, O.; Dr. J. C. Dunlavy, Sioux City, Ia.; Dr. J. M. Bleyer, New York; Dr. Alfred Stillé, Lea Brothers & Co. Philadelphia; The Chas. H. Phillips Chemical Co., New York; Occidental Med. Times, Sacramento, Cal.; Dr. J. Trush, Cincinnati; Dr. Wm. Woodward, Washington; Univ. of Penn. Press, Philadelphia; Dr. C. B Porter, Boston, Mass.; Dr. A. Philippi, Nieheim, Germany; Dr. Herbert Judd, Galesburg, Ill.; Dr. L. A. Roller, Detroit, Mich.; Dr. X. T. Bates, New Lebanon, N. Y.; Dr. J. J. Laurence, New York; T. W. Hannaford, London, Eng.; G. W. Moody, Shelbyville, Tenn.; Louis Jarchow, London, Eng.; Dr. M. Jay, South Bend, Ind.; T. H. Woodward, Lincoln, Neb.; C. F. Boehinger & Soehne, New York; J. R. Hawley, Cincinnati; Dr. J. W. Wright, Columbus, O.; Canton Surgical Chair Co., Canton, O.; Dr. W. F. Coleman, Chicago; Wm. C. Clemison, Warrenton, Mo.; Parke, Davis & Co., Detroit, Mich.; Dr. N. S. Davis, Dr. Frank S. Billings, Chicago; Dr. W. H. Williams, Brooklyn, N. Y.; Dr. W. E. Miller, Baylis, Ill.; Dr. H. P. Allen, Columbus, O.; Dr. C. A. Harvey, Dr. Ephraim Cutter, B. Westermann & Co., New York; Geo. W. F. Price, Nashville, Tenn.; Dr. E. C. Newman, Spokane Falls, Wash.; Dr. H. R. Storer, Dr. H. G. MacKay, Newport, R. I.; Dr. A. Blitz, Dr. N. B. Carson, St. Louis, Mo.; C. F. Putnam, Boston, Mass.; Dr. W. O. Bridges, Omaha, Neb.; Dr. W. S. Watson, Matteawan, N. Y.; Dr. C. H. A. Kleinschmidt, Washington; Dr. Alfred L. Carroll, Dr. Robert Newman, Frank Kiernan & Co.; Mariani & Co., Reed & Carnrick, J. M. Ceballos & Co., Drs. E. and J. A. Cutter, New York; Louis Lloyd & Co; Publishers Commercial Union, Drs. H. A. and F. S. Johnson, Chicago; Dr. A. M. Mason, Chatham, N. Y.; Johnson & Johnson, New Brunswick, N. J.; Dr. S. B. Craver, Bryan, O.; Dr. T. D. Crothers, Hartford, Conn.; Dr. H. R. Storer, D. M. Wick, New Hartford, Conn.; Sultan Drug Co., Peacock Chemical Co., St. Louis, Mo.; Dr. J. Williams, Dr. E. F. Newton, Boston, Mass.; Dr. J. A. Cantrell, Dr. R. J. Dunglison, Philapelphia; Dr. Max Thorner, Cincinnati; Dr. G. W. Lacea, E. Saginaw, Mich.; The Sun, Williamsport, Pa.; H. H. Howe, Weston, Vt.; Dr. J. Lowden, Carrollton, Ind.; Dr. Max E. Witte, Mt. Pleasant, Ia.; Potter & Clarke, London, Eng.; Dr. H. A. Bogie, Kansas City, Mo.; Dr. Wm. C. Woodward, Washington, D. C.; L. H. Wood, Highlands, Col.; Dr. M. Kirkpatrick, S. Omaha, Neb.; Dr. J. A. Crook, Jackson, Tenn.; Dr. Horatio R. Bigelow, Boston, Mass.; Dr. A. J. Shockley, Ruby, Mich.; Dr. B. C. De Roo, Cincinnati; Dr. D. G. Simmons, Adairville, Ky.; Dr. Henry C. Coe, New York; Dr. S. P. Dealhofe, Potsdam, O.; R. V. Woodcock, Jerome Kidder Mfg. Co., New York; A. E. Walesby, Louisville, Ky.; Dr. A. L. Hummel, Philadelphia; Dr. J. H. Carstens, Detroit, Mich.; Dr. H. C. Jones, Decatur, Ill.; Dr. J. Woitishek, Ely, Ia.; Dr. M. H. Fletcher, Cincinnati; A. Kingston, Philadelphia; Dr. C. F. Farrar, Kingston, Miss.; Dr. H. A. Lee, Liberal, Ind.; Dr. Wm. Mosby, Bardwell, Ky.; Farwell & Rhines, Watertown, N. Y.; Dr. A. P. Dudley, New York; Dr. F. P. Jenks, Brooklyn, N. Y.; Dr. J. J. Morrow, Gassville, Ark.; Dr. A. C. Haven, Lake Forest, Ill.; J. W. Farrar, Chicago; Dr. H. C. Markham, Independence, Ia.; Lea Bros & Co., Philadelphia; Horlick's Food Co., Racine, Wis.; Dr. W. W. Parker, Dibrell, Tenn.; W. D. Kline, Nashville, Tenn.; Wm. R. Warner & Co., Philadelphia; Dr. H. N. Hall, Chicago; The American News Co., New York; Doliber Goodale Co., Boston; Dr. D. C. Stillmans, Redlands, Cal.; Dr. P. M. Carrington, Savannah, Ga.; Dr. H. T. Pershing, Denver, Col.; Dr. M. T. Dodge, Troy, Me.; Dr. J. E. Hatcher, Mooreville, Tex.; Dr. O. W. McHellar, De Smet, Dak.; Dr. M. L. Pine, Fabius, N. Y.; Dr. L. F. Daggett, Sioux Falls, S. D.; Dr. J. E. MacAdams, Gardner, Ill.; Dr. W. T. Hall, Avenue, Pa.; Dr. T. H. Barton, Syracuse, N. Y.; Dr. Thos. H. Stewart, Church Hill, O.; Dr. Chas. W. Galloupe, Lynn, Mass.; Dr. E. A. Bass, Montello, Wis.; Dr. J. H. Fretz, Hagersville, Pa.; Dr. J. F. Maxwell, Resaca, N. C.; Dr. T. A. Drake, Terre Haute, Ind.; Dr. Jas. E. Pilcher, Fort Clark, Tex.; Dr. D. J. McCaffrey, Blackstone, Mass.; Dr. A. L. Carroll, E. Steiger & Co., New York; Armour & Co., Chicago; Dr. Henry Chapple, Billings, Mont.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 23, 1890, to May 29, 1890

Major J. B. Girard, Surgeon, is granted leave of absence for one month, to take effect as soon after June 1 prox. as a medical officer can be sent to Ft. Lowell for temporary duty. Par. 1, S. O. 48, Hdqrs. Dept. of Ariz., May 17, 1890.

By direction of the Secretary of War, a board of medical officers, to consist of Lieut.-Col. Anthony Heger, Surgeon; Major John Brooke, Surgeon; Major Robert H. White, Surgeon, will assemble at the U. S. Military Academy, West Point, N. Y., on June 7, 1890, to examine into the physical qualifications of the candidates for admission to the Academy and, in connection with the Superintendent of the Academy and Commandant of Cadets, the members of the graduating class. Reports of the proceedings of the board will be forwarded, through the Superintendent of the Academy, to the Adjutant General of the Army. Special reports will be made in the cases of any graduates deemed to be physically unfit for the military service, and also in the cases of candidates who may be admitted on probation or rejected. Par. 3, S. O. 121, A. G. O., Washington, D. C., May 23, 1890.

Major Charles L. Heizmann, Surgeon U. S. A., is granted leave of absence for one month. Par. 1, S. O. 39, Dept. of Texas, May 19, 1890.

Major John V. Lauderdale, Surgeon U. S. A. (Ft. Ontario, N. Y.), is hereby granted leave of absence for one month, to commence on or about June 1, 1890. Par. 4, S. O. 123, Hdqrs. Div. of the Atlantic, New York City, May 27, 1890.

By direction of the Secretary of War, as much of par. 2, S. O. 119, A. G. O., May 21, 1890, from this office, as relates to Capt. Robert B. Benham, Asst. Surgeon, is amended to read as follows: Capt. Robert B. Benham, Asst. Surgeon, will proceed from Madison Bks., N. Y., to Ft. Wadsworth, N. Y., and report in person to the commanding officer of that post for temporary duty.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 24, 1890.

Asst. Surgeon Rand P. Crandell, ordered to the Naval Hospital, New York.

P. A. Surgeon Thos. A. Berryhill, detached from hospital, New York, and ordered to hospital, Mare Island, Cal.

P. A. Surgeon Frank Anderson, ordered to special duty, Bureau Medicine and Surgery.

Medical Inspector W. K. Van Reypen, ordered to New York on special temporary duty.

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ORIGINAL ARTICLES.

TWO CASES OF RESECTION OF THE CÆCUM FOR CARCINOMA: WITH REMARKS ON INTESTINAL ANASTOMOSIS IN THE ILEO-CÆCAL REGION.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 21, 1890.

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The two cases reported in this paper are intended to serve as a contribution to the as yet scanty literature of resection of the cæcum. In complete excision of the cæcum the section on the proximal side of the portion to be removed necessarily falls through the ileum near its junction with the cæcum, while on the distal side the ascending colon is divided transversely, which, after the removal of the cæcum, makes it necessary to unite two bowel ends of unequal lumina if an attempt is made to restore the continuity of the intestinal canal by circular suturing. As the resected end of the colon is at least three times larger than the ileac end, circular suturing is impossible without resorting to some device by which the two lumina are made more nearly alike in size. Two methods have been suggested to accomplish this object: 1. The excision of a V-shaped piece from the distal end, the base of the portion to be removed being sufficiently wide, so that after bringing the two margins of the triangular wound in apposition by two rows of sutures, the colon should correspond in size with the ileac end. Against this procedure it can be urged that it requires additional time in making the resection, and necessitates a large number of sutures which are always a source of danger, at the same time there is considerable danger from gangrene at the junction of the circular line of suturing with the line of sutures made parallel to the gut in closing the triangular wound. 2. Oblique resection of the ileum, the lumen being increased at the expense of a part of the convex portion of the bowel. This is the method which Billroth followed in a number of cases. If the section of the bowel is made sufficiently oblique so that the lumen shall correspond in size with that of the distal end, it must be apparent that after the ends have been united by sutures the insertion of the ileum into the colon is at an acute angle, the apex of the angle being directed downwards and the base in an upward direction, a condition which is invariably attended by the formation of a long spur between the lumina of the united intestines. The combined influence of the obliquity of the terminal end of the ileum to the colon, and the presence of a spur between it and the colon results in intestinal obstruction at this point. Experience has demonstrated that the fear of causing a serious and often a fatal obstruction by this method of operating is not unfounded. Billroth lost several cases from this cause, and has abandoned the operation as impracticable and dangerous. There are at present only two procedures which can be employed with safety in uniting bowel ends of unequal lumina after enterectomy: 1. Lateral implantation. 2. Lateral apposition by means of absorbable perforated approximation plates. Billroth now resorts to the former method, and with its adoption the results after excision of the cæcum have improved. If the continuity of the bowel after excision of the cæcum is restored by lateral implantation, the end of the colon is closed by invagination, and a few superficial sutures to prevent disinvagination, and the ileac end is implanted into a slit in the colon, at a point opposite to the mesocolon and about two inches from the closed end. The slit in the colon should correspond in size with the circumference of the ileac end to be implanted. The fixation of the ileum by Czerny-Lembert sutures is a time-consuming and unsafe procedure. Some time ago I devised a method of implantation in such cases which requires in its execution only one-fourth the time consumed in suturing, and the results obtained by it were far more satisfactory. The method consists in lining the ileac end to be implanted with a narrow flexible rubber ring, which is retained in place by a continued catgut suture, embracing

the free margin of the bowel and the lower margin of the rubber ring. The ring itself is simply a narrow rubber band, the length of which corresponds with the size of the lumen of the bowel, and which is converted into a ring by fastening the ends together with two catgut sutures. The implantation is made by two catgut sutures, threaded each by two needles and passed at opposite points from within outwards through the upper margin of the ring and the entire thickness of the bowel, while on the opposite side the needles are only passed through the serous and muscular coats of the colon. After both sutures are in place gentle traction upon all the four ends invaginates the end of the ileum into the incision in the colon, and the colon is drawn well over the end of the ileum to the points where the needles emerged from the ileum. When in proper position, the serous surfaces of the colon and ileum corresponding in extent to the width of the rubber ring are in accurate coaptation, after the two sutures are tied. In my experiments on animals it was found necessary only in exceptional cases to apply one or two additional superficial coaptation sutures. The rubber ring keeps the lumen of the ileum patent for the ready escape of intestinal contents into the colon, at the same time the gentle elastic pressure which it exerts upon the parts around it, is an important element in securing accurate apposition between the coaptated serous surfaces. The implantation sutures can usually be relied upon in maintaining the invagination until adhesions have taken place, but in operations upon the human being it would be well to reinforce them by a number of Lembert sutures after the bowel has been fixed in its place by tying of the invagination sutures. Of the numerous experiments on dogs in which I practiced this method of implantation, I will only cite one in illustration of what has been said concerning the ease of execution and safety of this operation.

"Dog, weight 35 pounds. Ileum divided twelve inches above ileo-cæcal region, distal end closed by invagination and three stitches of the continued suture, and the proximal end lined with flexible rubber ring was implanted into an incision in the transverse colon, and retained by two catgut invagination sutures. An omental flap an inch and a half in width was placed over the junction of the two intestines, and fixed in its place by two catgut sutures. No unfavorable symptoms after the operation. Animal when killed eighteen days later, was in excellent condition. Omentum adherent to abdominal wound, which was firmly united. Omental flap adherent all around. Colon above new opening ten inches in length, completely empty, contracted and atrophic. New opening oval in outline, and as large as the lumen of the ileum."

In this, as well as in a number of other cases, the line of junction between the ileum and colon was covered with an omental flap, and without exception the flap was found adherent throughout, constituting a living bridge between the united intestines joined together. In a number of cases I found at the necropsy the ileum projecting slightly into the lumen of the colon, presenting around the new opening a circular ridge of mucous membrane, which in structure, and probably also in function, represented almost to perfection the normal ileo-cæcal valve. Lateral implantation of the ileum into the colon after excision of the cæcum is a speedy and comparatively safe procedure, and yields excellent functional results, but continuity of the intestinal canal under similar circumstances can be restored by a still more simple and efficient operation, viz: ileo-colostomy by approximation plates of decalcified bone. In this operation the tissues are not damaged by extensive suturing, while, on the other hand, large serous surfaces which it is intended to unite are brought together, and are kept in uninterrupted accurate contact by the absorbable bone-clamp until firm adhesions have formed. The cases here reported are of interest, because in both of them after excision of the carcinomatous cæcum the continuity of the intestinal canal was successfully restored by this method.

Case 1.—Carcinoma of cæcum; excision of cæcum and eighteen inches of ileum with corresponding portion of mesentery. Restoration of continuity of intestinal canal by ileo-colostomy with decalcified perforated bone plates. Recovery.

The patient was a spare man of medium height, 37 years of age, and a farmer by occupation, who came to consult me by the advice of his family physician, Dr. Minnahan, of Cato. The patient is unaware of the existence of any hereditary taint or predisposition to tuberculosis or malignant disease in his family. His health was excellent prior to August 16, 1887. On that day he was taken suddenly ill with an attack of vomiting, without any obvious cause, which lasted for six hours. The patient insists that towards the last he vomited fæcal matter. He recovered rapidly and remained in comparatively good health until the following October, when he suffered from a similar attack of four hours duration. This time he experienced a sharp pain in the ileo-cæcal region, and soon after felt a distinct swelling in that locality. From this time on until March, 1889, the pain recurred periodically, the intervals becoming shorter and shorter until pain became almost continuous with few and only slight remissions. During this time he suffered also a great deal from flatulence, the bowels were inclined to be loose, but the general health was not much impaired. Since March, 1889, diarrhœa became a prominent symptom, the stools being liquid, but showing no trace of

blood or mucus. Pain increasing in severity and more constant, and always partially relieved by the free passage of gas per rectum. At the time he was admitted to the Milwaukee Hospital, October 9, 1889, he had lost 45 pounds in weight. Examination at this time revealed the existence of a hard nodulated fixed tumor in the ileo-cæcal region, and tympanites in the hypogastric and umbilical regions. Distension of the colon by rectal insufflation of hydrogen gas made the tumor more prominent, showing that its location was intra- and not extra-peritoneal. Not much tenderness on pressure. Digital exploration of rectum yielded a negative result. Marasmus and anæmia well marked. For the last seven months the patient has had from four to six liquid discharges from the bowels. Appetite impaired. Temperature normal, pulse from 80 to 90 per minute. From the history of the case, and especially from the character and location of the tumor, a positive diagnosis of carcinoma of the cæcum was made. As the ordinary medical treatment which had been pursued for months afforded but little relief, the consent of the patient and his friends to an operation was readily obtained. Laparotomy was performed on the day of his admission, October 9, 1889. Before chloroform was administered $\frac{1}{6}$ of a grain of morphine with $\frac{1}{2\frac{1}{0}}$ of a grain of atropia were given subcutaneously. The strictest antiseptic precautions were carried out before and during the operation. The abdomen was opened by an incision extending from near the middle of Poupart's ligament to a point half way between the anterior superior spinous process of the ileum and the umbilicus. As soon as the peritoneum was opened the tumor came into view. It was now seen that the tumor involved the entire circumference of the cæcum, and its immobility suggested that it was intimately connected with the retro-peritoneal tissues. The ileum and colon were emptied by displacing their contents, and each part was entrusted to an assistant, who was instructed to prevent fæcal extravasation by making digital compression until the completion of the anastomosis. The colon was divided about two inches below the margin of the tumor and the ileum near its junction with the cæcum; both sections showed that the incisions were made through healthy tissue. The bleeding vessels were tied with fine silk ligatures. Several large glands were found in the retro-peritoneal space behind the cæcum, and were enucleated in one large mass with the cæcum and a portion of the peritoneum which was adherent to the glands. After the removal of the cæcum, it was noticed that the mesentery of the lower portion of the ileum contained several enlarged glands, consequently it was removed with about eighteen inches of the ileum. The mesentery was tied in a number of small sections with fine silk ligatures before it was excised. During the whole operation a small compress was kept in the abdominal cavity to prevent prolapse of the small intestines, and to guard the peritoneal cavity against infection in case fæcal extravasation should occur. After all hæmorrhage had been carefully arrested both resected ends were closed by invagination and a few stitches of the continued suture, the first stitch was made to transfix the mesentery at the point where it was invaginated into the bowel. Medium sized perforated decalcified bone plates were used in making the ileo-colostomy by lateral approximation. An incision about two inches in length was made near the closed ends of both intestines at a point opposite the mesenteric attachment, and into each opening a bone plate was inserted, and the lateral sutures, armed with a needle, were passed about an eighth of an inch from the margin of the wound at a point half way between the angles of the intestinal wound. The surfaces of the bowel corresponding to the part covering the plates were freely scarified with an ordinary sewing needle. The visceral wounds were now brought *vis a vis* in such a manner that both closed ends were directed downwards, bringing in this manner the free surface of the colon and ileum together. Before any of the plate sutures were tied a number of Lembert sutures were applied posteriorly, sufficiently far back so that after the approximation they should be just beyond the borders of the plates, thus affording additional security in maintaining coaptation. The posterior pair of transfixion sutures was now tied, after which both pairs of the sutures not armed with needles were tied. During the tying of these sutures it is of the greatest importance that an assistant should keep the plates accurately and closely pressed together. The last sutures to be tied were the second pair of fixation sutures, and as this was being done the bowel on each side was carefully pushed in between the plates with a probe. The sutures were tied in a square knot and only with sufficient firmness to bring the parts in apposition, as any undue pressure would have been detrimental, and might have resulted in gangrene of the tissues included between the plates. The sutures were cut short and the ends brought as near the opening as possible by pushing them in this direction with a probe. After all the approximation sutures were tied, it only remained to apply on the upper side a few Lembert sutures in the same manner as was done on the opposite side before any of the approximation sutures were tied. After the exposed parts were disinfected and dried, the bowel was returned into the abdominal cavity and anchored near the wound with a silk suture, which was made to embrace the parietal peritoneum and mesentery at a point opposite the anastomotic opening. The wound was closed

with two rows of sutures, the first including only the peritoneum. No drainage. The subsequent history of the case was uneventful. The highest temperature was registered on the third day, when it reached 101.6° F., but returned to normal on the fourth day. During the first two days liquid food was administered by rectum. After this time the patient was allowed milk, beef tea and raw eggs, and after another week he was placed on the ordinary hospital diet which he relished greatly. The bowels moved from one to three times daily, the passages becoming gradually normal in color and consistence. The wound healed by primary union with the exception of a small place where a small parietal abscess formed at the end of the first week. On the ninth day half of the plate in the colon passed per rectum, and the following day the remaining half with the plate from the ileum with the sutures attached, was found in one of the stools. The patient left his bed on the twenty-eighth day after the operation, and three days later he returned to his home in the northern part of Wisconsin. At the time he left the hospital nothing abnormal could be felt in the right iliac region; no pain and no tenderness on pressure. He gained rapidly in flesh and strength, and when I saw him again during the latter part of January, 1890, he weighed nearly as much as before he was taken sick. Since the operation he has had no pain, no diarrhœa, and the discharges from the bowels once or twice a day were normal in every respect. At this time, however, I was able to detect a small hard nodulated tumor behind the colon at a point above where the ileum had been attached to the colon, which I regarded as a recurrence of the disease along the chain of lymphatics behind the peritoneum, but no evidence of a return of the carcinoma in the bowel. The specimen removed represents the entire cæcum, a number of retroperitoneal glands, eighteen inches of the ileum with the mesentery attached to it. The carcinoma had evidently started in the ileo-cæcal valve and involved the entire circumference of the cæcum, the walls of which had become greatly thickened by the infiltration. The lumen of the ileo-cæcal opening was not larger than an ordinary lead pencil, and the interior of the cæcum near the ileo-cæcal valve presented a number of deep excavations resulting from the breaking down of the carcinomatous mass. The walls of the ileum for some distance above the cæcum were greatly thickened, and as examination showed the thickening was due to the formation of new muscular fibres, the thickening must be regarded in the light of a compensatory muscular hypertrophy which occurred in consequence of the chronic obstruction at the ileo-cæcal opening. At a point corresponding to the meso-cæcum the carcinoma had reached the outer surface of the bowel, and from here undoubtedly the extension of the disease to the retro-peritoneal lymphatic glands had taken place. Stained sections of the tumor under the microscope showed that the growth was a cylindrical celled carcinoma.

Remarks.—It is interesting to note in this case that, although the carcinoma started in a place where even a slight narrowing may give rise to obstruction, the patient suffered for more than half a year from diarrhœa, which is often one of the most important clinical evidences of the existence of a chronic obstruction, especially when located below the ileo-cæcal valve. The obstruction increases the functional activity of the bowel for some considerable distance above it, and the increased secretion is forced almost as soon as it appears in the bowel, through the narrow opening beyond the seat of obstruction, on account of the increased muscular activity of the hypertrophic portion of the bowel. Chronic obstruction is followed by symptoms of acute strangulation where one of two things happens: 1. If a solid body becomes impacted in the narrowed lumen of the bowel the obstruction becomes at once complete, and the symptoms then rather point to the existence of conditions which are known to give rise to acute obstruction than to a chronic cause.

2. If from any local or general causes the compensatory hypertrophy of the bowel on the proximal side of the obstruction is rendered inadequate, the bowel becomes dilated, and finally completely incapacitated from performing its function, and the clinical picture of chronic obstruction is supplanted by symptoms of acute obstruction. From the history of the case it is evident that the carcinoma commenced more than two years ago, and was the cause of the periodical pain and diarrhœa, both of which symptoms gradually becoming more severe and persistent as the stenosis increased. Cylindrical celled carcinoma of the large intestine, like the squamous epithelioma of the lip, is slow in its growth, and, as a rule, is followed by glandular infiltration at a late date. We have every reason to believe, that had a radical operation been performed in this case before the disease extended beyond the limits of the bowel, the prospect of a permanent cure would have been good. The recurrence of the disease in the retro-peritoneal lymphatic glands four months after the operation only shows the difficulty of eradicating the disease after lymphatic infection has occurred. The new opening between the ileum and colon must have been adequate, as the normal fæcal circulation was restored almost immediately after the operation, and has remained so to the present time. Although a fatal termination from recurrence of the disease in the retro-peritoneal space is inevitable, the results of the operation must be regarded as highly satisfactory. All has been accomplished by the operation that can be expected under

these circumstances, removal of the cause of obstruction without recurrence of the disease in the bowel, and perfect restoration of the continuity, and function of the intestinal canal after such extensive resection.

Case 2.—Carcinoma of ileo-cæcal valve with invagination; Resection of cæcum with portion of colon; Restoration of continuity of intestinal canal by ileo-colostomy with absorbable perforated bone plates; Death six days after operation from peritonitis caused by deep ulcers of excluded portion of colon.

This patient was a corpulent married woman, 53 years of age, who was placed under my care at the Milwaukee Hospital, November 14, 1889, by her physician, Dr. L. Reinhard, of this city. She is the mother of eleven children, and had always been in robust health until a year before she was admitted into the hospital. No history of tumors in any member of the family. Her present illness dates back one year, when she was seized by an attack of vomiting without any apparent cause, as even then she was able to take food without causing any discomfort. The vomiting was not attended by nausea, and subsided after a few days without any special treatment. A month later a similar attack recurred, followed again by apparent complete recovery. During the next six months she suffered from six similar attacks at intervals of one month; each attack lasting for a few days, between them the patient considered herself well. The intervals then became gradually shorter, at first every two weeks, then every week, and finally every second or third day. During all this time she never suffered from constipation, the stools being normal in frequency and character. During the last ten months she has lost forty pounds in weight, and the complexion of the face, which formerly was ruddy, has now become pale and yellow. A tumor was discovered five weeks ago in the umbilical region by her attending physician. At that time she suffered a great deal from pain and vomiting, both of which were relieved by a brisk cathartic. From this time on the bowels moved several times a day, the discharge being liquid, but contained at no time either mucus or blood. A number of physicians who examined the patient since the tumor was discovered in the umbilical region, made a diagnosis of carcinoma of the stomach, and gave it as their opinion, that the tumor involved the great curvature of this organ. Pain and vomiting have been the most prominent symptoms for a number of weeks, and were only partly relieved by subcutaneous injections of large doses of morphia. Although the patient felt more distressed after eating, the vomiting occurred at irregular intervals, and was not always brought on by taking food. A careful examination made the day before operation revealed the presence of a firm movable tumor, somewhat elongated in shape, and about the size of a medium sized orange, a little above and to the right of the umbilicus. The tumor could be easily pushed under the costal arch on both sides, and in a downward direction on the right side nearly as far as the iliac region, but not quite as far to the left side. The mobility was less in a lateral direction. The patient was much emaciated and presented an anæmic, almost cachectic appearance. It was almost the unanimous opinion of those who examined the patient at this time, that the tumor, carcinomatous in character, was located in the large curvature of the stomach, but the possibility of carcinoma of the transverse colon was not excluded. The great mobility of the tumor induced me, at the urgent request of the patient and her husband, to make an attempt to remove it in either event. The operation was performed November 14, 1889. Immediately before the operation the stomach was washed out with a warm saturated aqueous solution of salicylic acid, and, at the same time, morphia and atropia were given subcutaneously. Chloroform was used as an anæsthetic. The abdomen was opened by an incision through the median line, extending from near the ensiform cartilage to the umbilicus. Manual exploration revealed the stomach in a healthy condition, and after careful examination it was ascertained that the tumor consisted of the structures of the ileo-cæcal region which had become invaginated as far as the middle of the transverse colon. The incision was now enlarged in a downward direction for the purpose of securing more easy access to the seat of invagination. Moderate traction upon the bowel below the apex of the intussusceptum and above the neck of the intussuscipiens had no effect in reducing the invagination. I now grasped the invaginated portion with both of my hands, and made firm compression for a few minutes was made for the purpose of diminishing the swelling by squeezing out the blood and œdema fluid, and thus facilitating the subsequent steps in effecting the invagination. The neck of the intussuscipiens was dilated by inserting the tip of the index finger at different points. Traction was then again made as before, and reduction was accomplished, not, however, without making a number of longitudinal lacerations in the peritoneal covering of the intussuscipiens, the rents extending from its neck in an upward direction for two or three inches. The invaginated portion was eight inches in length, and was composed of the entire cæcum, a portion of the ascending colon and a small part of the ileum. An examination of the surface of the intussusceptum, showed that the obstacles to reduction were numerous adhesions between the apposed serous surfaces of the intussusceptum and in-

tussuscipiens, which were forcibly separated during the disinvagination. On submitting the cæcum to a careful examination, it was evident that its interior was occupied by a tumor which appeared to involve the ileo-cæcal opening. The cæcum was therefore opened by a longitudinal incision, and examination of its interior by inspection and digital exploration revealed an ulcerating carcinoma, which occupied the entire ileo-cæcal valve, and had infiltrated a considerable portion of the cæcum. A similar incision was made into the ileum near its insertion into the cæcum, and digital examination through this opening proved that the carcinoma had diminished the size of the ileo-cæcal opening to the diameter of an ordinary lead pencil. Retro-peritoneal and mesenteric glands normal. As the invaginated portion of the colon had been considerably damaged during the reduction of the invagination, it was decided to remove it with the carcinomatous cæcum. Fæcal extravasation was prevented in the same manner as in the preceding case by digital compression of the intestine beyond the line of section. The meso-colon and meso-cæcum were ligated in small sections with fine silk before the parts were excised. The ileum was divided about three inches above its insertion into the cæcum, and the colon about eight inches below the ileo-cæcal valve. Both resected ends were turned inwards about an inch, and the invagination maintained by a few stitches of the continued suture, which embraced only the serous and muscular coats, and one of them also the invaginated mesentery. The continuity of the bowel was restored by an ileo-colostomy with decalcified perforated bone plates in the same manner as in the first case, only that in this instance the incision into the colon was made about six inches from its closed end, as the part below this, which had been the intussuscipiens, could not be trusted in doing its share of the work in establishing the intestinal anastomosis, on account of the pathological conditions which were produced during the time the invagination existed. The peritoneal lacerations which were made during the reduction of the invagination were closed with a few superficial sutures. Scarification of the serous surfaces which were to be included by the plates was done before the approximation sutures were tied, and a number of superficial sutures were applied outside the borders of the plates to aid these in maintaining apposition between a maximum area of serous surfaces. Through the mesentery of the closed resected ends, a suture was passed which was brought out through a button-hole made for drainage in the right iliac fossa, and after the intestine was dropped into the abdominal cavity the approximated portion was drawn into proper position in the ileo-cæcal region by making traction on the suture, and was anchored in this locality by tying the suture over a small roll of iodoform gauze. A rubber drain was inserted through the button-hole, and the abdominal incision closed in the usual manner by two rows of sutures. External dressing was composed of a compress of iodoform gauze, and a thick layer of absorbent cotton, which was retained by wide strips of rubber plaster encircling two-thirds of the circumference of the body. Duration of the operation an hour and a half. The patient reacted well from the immediate effects of the operation, and no untoward symptoms appeared until the end of the third day, when unmistakable symptoms of septic peritonitis developed suddenly, which rapidly increased in intensity as the inflammation became more diffuse. The dressings were now removed and through the drainage opening pus was sought for, but no fluid could be found. Castor oil was given which procured free evacuation. The peritonitis proved fatal on the third day, six days after operation.

Post-mortem four hours after death. Abdominal incision united throughout. Omentum displaced towards the right iliac region and adherent to intestines. Separation of the omental adhesions liberated about half a pint of sero-sanguinolent fluid from the right iliac region. A fibrino-plastic peritonitis which had evidently started near the site of operation was found to have become diffused from here over the lower portion of the peritoneal cavity, being especially well-marked in the right iliac region. Breaking down the adhesions the closed end of the colon was found turned in an upward direction, while the seat of approximation occupied the ileo-cæcal region. At a point corresponding to the cut surface of the meso-colon a disintegrated softened blood clot was found. After removing the coaptated parts with adjacent portion of the colon and ileum, the serous surfaces, which had been included between the plates, were found firmly adherent throughout, and the superficial sutures completely buried underneath a layer of plastic exudation. On connecting the ileum with a hydrant a large stream of water escaped from the gut end of the colon, showing that the new opening was fully established. On closing the open end of the colon the bowel was forcibly distended without causing any leakage, a positive proof that union between the coaptated surfaces was perfect. The remnants of the plates came away by the irrigation to which the specimen was submitted, the one from the ileum was much softened, while in that from the colon about three quarters of the margin of the perforation was still intact. On slitting the bowel open on each side, where the plates had been, the anastomotic communication could be seen from each side as an oval opening with smooth margins lined with mucous membrane through which the thumb could be readily inserted as far as the first point.

The approximation sutures remained attached by one of the marginal threads. The most interesting condition was found in the excluded portion of the colon, that is, in that part below the anastomotic opening which formerly had been the intussuscipiens. An old circular ulcer about a quarter of an inch in diameter with abrupt indented margins was found at a point which corresponded to the space between the two layers of peritoneum of the meso-colon. The ulcer had nearly perforated, and the peritoneum covering it was of an ashy-gray color, showing that it was on the verge of necrosis; this point corresponded to the location of the softened blood clot from where evidently the peritonitis had taken its origin. There can be but little doubt that infection occurred from the ulcer through the necrosed peritoneum, where it was communicated to the blood clot, and from there to the peritoneum. Another ulcer somewhat smaller in size, was found about an inch higher up in the bowel and at a point opposite to the attachment of the meso-colon.

Remarks.—In this case the carcinoma, of the same tissue type as in the preceding case, developed in the region of the ileo-cæcal valve, where it infiltrated the entire circumference of the ileo-cæcal opening, thus giving rise to early stenosis and remote symptoms of intestinal obstruction. As the tumor in the umbilical region was only discovered five weeks prior to the operation, it is somewhat uncertain at what time invagination occurred. The great thickening of the wall of both the intussceptum and the intussuscipiens, the great vascularity and especially the numerous firm adhesions, would rather indicate that the invagination had existed for a long time, perhaps six months or a year. Chronic invagination can exist for a long time without becoming an immediate source of danger. Pohl has described an interesting specimen of chronic invagination taken from a man 62 years of age, who suffered from two attacks of intestinal obstruction eleven years apart. The second attack proved fatal after an illness of eleven days' duration. The post-mortem appearances indicated that the invagination which was found had existed for eleven years, and that the second attack was due to an aggravation of the mechanical difficulties at the seat of invagination, which had given rise to ulcerative inflammation of the mucous membrane lining the intussusceptum, perforation and suppurative peritonitis. The invagination was located in the lower portion of the ileum. The intussuscipiens was 30 ctm. in length, its muscular coat hypertrophic, mucous membrane thickened and very vascular, and some of its folds adherent to the enclosed intestine; on the posterior wall near the mesenteric attachment two perforations were found. The mucous membrane of the intussusceptum was extensively ulcerated; old and firm adhesions at the neck of the intussuscipiens. The mesentery of the ileum, throughout, but especially at the seat of invagination, was much thickened. The ileum above obstruction dilated and its walls thickened. The ileum for some distance in my case was slightly dilated and its walls hypertrophic. The thickening gradually increased as the ileum approached the cæcum. The ulcers which were found in the excluded portion of the colon, and which for obvious reasons I considered the direct cause of the fatal peritonitis, were undoubtedly of long standing and were caused by the invagination. My only regret in this case is that I did not excise the entire invagination, intussusceptum and intussuscipiens, as in case this had been done the patient would not only have recovered from the operation, but would in all probability have been permanently cured. In reference to diagnosis during life, I will repeat that the most urgent and prominent symptoms pointed rather to carcinoma of the stomach than to carcinoma of the cæcum complicated by invagination. In the aged invagination is frequently caused by the presence of a malignant tumor in the bowel below the ileo-cæcal valve, and the obstruction, like in my case, is usually at first incomplete and gives rise to a clinical picture suggestive of chronic stenosis. The absence of blood and mucus in the discharges, of constipation and straining, and the presence of periodical attacks of vomiting, but more especially the great mobility of the tumor, led me to suspect a carcinoma of the great curvature of the stomach rather than the conditions found during the operation. On the supposition that the tumor was located in the stomach, the abdomen was opened by a median incision, which on being enlarged afforded ample access to the parts which were to be treated by operative measures. Had the primary location of the carcinoma been known beforehand and the complication correctly interpreted, it would have been better to open the abdomen by a lateral incision, as was done in the first case. Adequate drainage, should this be required, can be established more readily after an operation through a lateral than a median incision.

INTESTINAL ANASTOMOSIS IN THE ILEO-CÆCAL REGION.

Indications.—Intestinal anastomosis by making an ileo-colostomy with perforated decalcified bone plates must now be accepted as an established surgical procedure in the treatment of the following affections: 1. Irreducible ileo-colic invagination without perforation or gangrene. 2. Cicatricial stenosis in the ileo-cæcal region. 3. Carcinoma of the cæcum with or without excision of the diseased portion of the bowel.

1. If in an invagination of the bowel in the ileo-cæcal region, the most frequent location where this accident occurs, reduction cannot be effected by rectal insufflation of hydrogen gas made while

the patient is profoundly under the influence of an anæsthetic and held in an inverted position, treatment by laparotomy should be resorted to promptly, and in case disinvagination by direct manipulation is found impossible, and no evidences of perforation or approaching gangrene can be detected, the continuity of the bowel should be restored by an ileo-colostomy without excision of the invaginated portion. The pathological conditions in the invaginated portion of the bowel which render the reduction impossible and which later result in gangrene and perforation are always greatly aggravated by the conditions created by the obstruction. If the obstruction is excluded by establishing an anastomotic opening between the intestine above and below it, the violent peristalsis and distension of the bowel on the proximal side of the obstruction are removed and rest is secured for the invaginated portion, an important element in the prevention of further destructive changes. Ileo-colostomy by approximation plates is made a few inches below the apex of the intussusceptum, and enough of the ileum is excluded so as to prevent any undue tension upon the parts included by the plates. Spontaneous reduction may take place some time after the obstruction has been remedied in this manner, and if this should not occur and the obstruction remains permanently, this procedure has rendered it harmless as far as the fæcal circulation is concerned, while at the same time it has placed the invaginated portion in the most favorable condition to recover from the immediate effects of the strangulation.

2. Enterectomy for cicatricial stenosis should never be practiced, as this operation is attended by a great deal more danger to life than an ileo-colostomy with approximation plates, and the latter restores the continuity of the intestinal canal with permanent exclusion of the seat of obstruction. If the lumen of the bowel can be restored by a plastic operation similar to the one which has proved so successful in the operative treatment of cicatricial stenosis of the pylorus, this should be done in preference to an ileo-colostomy, as the danger incurred is not greater than attends this operation, while it offers all the advantages of an enterectomy minus its dangers. The pyloro-plastic operation devised by Heineke-Miculicz consists simply in incising the strictured portion parallel to the duodenum and pyloric portion of the stomach and uniting the wound transversely by a double row of sutures. The same operation is applicable to narrow strictures of the intestines. If on account of the width of the stricture this operation is not applicable, then the next safest and most efficient plan to pursue is to make an anastomosis between the bowel above and below the stricture with decalcified bone plates, which at once renders the obstructiou harmless by excluding the affected portion of the bowel permanently from the fæcal circulation.

3. The method and advantages of ileo-colostomy in restoring the continuity of the intestinal canal after resection of the cæcum are well illustrated by the two cases reported in this paper. If, after opening the abdomen for the operative treatment of malignant disease of the cæcum, resection is found impracticable on account of numerous adhesions or extensive involvement of the retroperitoneal or mesenteric glands, the seat of obstruction should be permanently excluded from the fæcal circulation by making an ileo-colostomy with approximation plates. This procedure is far preferable to the formation of an artificial anus above the obstruction, as it removes equally well the symptoms of obstruction, doing away at the same time with the inconveniences and disgusting features necessarily associated with an artificial anus. An ileo-colostomy with decalcified perforated bone plates is not a more dangerous operation than the formation of an artificial anus, and the remote benefits which are derived from it are incomparably superior to the conditions created by an artificial anus.

OPERATIVE TECHNIQUE.

Like all other intra-abdominal operations, an ileo-colostomy for any of the above named conditions should always be done under strict antiseptic precautions. The shock following operations in which the peritoneal cavity is exposed for an hour or more is diminished by a subcutaneous injection of morphia and atropia, given just before the anæsthetic is administered. The temperature of the operating room should not be less than 80° F. during the entire operation. If the bowel is permeable a cathartic is given the day before operation and the following morning the colon and rectum are emptied by the use of high enemata, to which is added some harmless antiseptic such as salicylic or boracic acid.

Incision.—In all operations in the ileo-cæcal region the incision should be made not in the median line, but directly over the organ to be operated on. The incision that affords most ready access to the cæcum is one extending from an inch above the middle of Poupart's ligament to a point halfway between the anterior superior spinous process of the ileum and the umbilicus. In making this incision the director should be entirely dispensed with. With a sharp scalpel the skin and superficial fascia are divided with one stroke of the knife, and then one layer after another of the abdominal muscles is divided in a similar manner until the subperitoneal fat is reached. This is picked up with the peritoneum with two toothed catch forceps and the abdominal cavity is opened between them. The hæmorrhage is arrested at every step of the operation by applying to the bleeding points hæmostatic forceps, without losing any time in tying vessels which subsequently may not require ligation. One or

two fingers are introduced through the small incision made in the peritoneum, and upon them this structure is divided to the extent of the external wound. After the peritoneal cavity is opened the part to be operated on is brought into the wound and prolapse of the small intestines is prevented by packing aseptic gauze or a clean napkin wrung out of an antiseptic solution around it. If not a sufficient number of reliable assistants are at hand, fæcal extravasation can be effectually prevented by elastic constriction of the intestine above and below where the communicating opening is to be made. The mesentery near the bowel at each of the places is perforated with a closed hæmostatic forceps and with this a narrow aseptic rubber band is drawn through, which is then tied with sufficient firmness to prevent the escape of fæcal matter. If the cæcum is to be excised two additional rubber bands are applied to the part to be removed so as to prevent extravasation from this part, after the bowel is divided. The spaces between the rubber ligatures must be carefully emptied by displacing the contents by passing the intestine between two fingers before the rubber bands are tied. The meso-cæcum must be tied in small sections with firm Chinese silk before the cæcum is removed, as otherwise troublesome hæmorrhage is incurred from slipping of the ligatures. After excision of the cæcum and as much of the colon and ileum as may be necessary, both ends are permanently closed by invagination and a few stitches of the continued suture. The best way to effect invagination is to grasp the margin of the bowel where the mesentery is attached with an ordinary catch forceps and to carry this portion into the lumen of the bowel to the extent of an inch, when the remaining portion of the circumference of the cut end will follow, and by a little manipulation about an inch is evenly invaginated, when the first stitch is made on the mesenteric side in such a manner as to transfix the invaginated mesentery and the muscular and serous coats of the bowel. After this is tied a few more superficial stitches are taken, and the first and last stitch are tied together so as to pucker the end of the bowel somewhat in the manner done in tying a tobacco pouch. In making an anastomosis between the closed end of the ileum and colon after resection of the cæcum both ends should be made to lie side by side with the closed ends in a downward direction, and the surfaces to be united should correspond to the part of the intestine opposite the mesenteric attachment. In making an ileo-colostomy without enterectomy the anastomotic opening must be made at least 2 or 3 inches distant on each side from the part which it is necessary to exclude permanently from the fæcal circulation.

PERFORATED DECALCIFIED BONE PLATES.

After having tried all kinds of material, organic and inorganic, absorbable and inabsorbable, for making the apposition plates, I have finally settled on decalcified bone as the most suitable material. In preparing the plates the compact layer of an ox's femur or tibia is cut with a fine saw into oval plates, ¼ of an inch in thickness, 2½ to 3 inches in length and 1 inch in width. The plates are then decalcified in a 10 per cent. solution of hydrochloric acid, changed every twenty-four hours, until they have become sufficiently soft, so that they can be bent in any direction without fracturing. After decalcification they are washed and immersed for a short time in a weak solution of caustic potash, so as to remove the acid. Until quite recently I dried the plates between blotting paper compressed between two pieces of tin so as to keep the plates from warping during the drying process. The central opening and perforations for the threads were made after the plates were dry. Experience has taught me that it is unsafe to use material for plates which when exposed to the fluids of the intestinal canal will imbibe a sufficient amount of fluids to increase to two or three times in thickness, as such increase in the thickness of the plates may cause a sufficient degree of pressure to cause gangrene of the parts included between them. This happened in

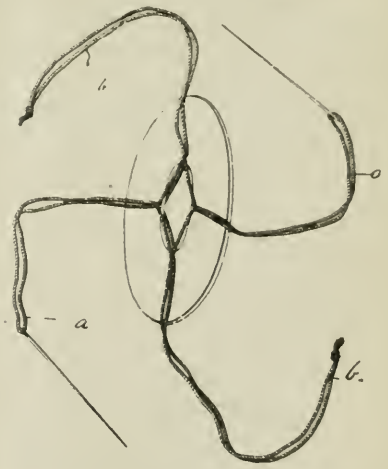


FIG. 1.—Perforated decalcified bone plate, threaded and ready for use. (*a*) Fixation or lateral sutures; (*b*) apposition or end sutures

at least two of my gastro-enterostomies. Since then I have not dried the plates, but keep them after decalcification in a solution of equal parts of alcohol, glycerine and water which keeps them in a pliable, soft condition, and such plates undergo no change in size after their introduction into the stomach and intestine until they are gradually

removed by absorption and disintegration from the third to the tenth day. After the acid has been removed the central oval opening can be readily made with a sharp penknife, and the four perforations around it for the threads are made with a fine drill, and after the plate is threaded it is kept ready for use in the solution first mentioned.

Any one conversant with the manner in which the plates are threaded can keep them in the solution until they are needed. When the plates are to be used they are washed in a 2 per cent. carbolic acid solution and the threads or sutures attached by threading two fine sewing needles, each with a piece of aseptic silk 24 inches in length, which are tied together; the knots become the ends of the end sutures, while the middle of such thread holds a needle and becomes the terminal part of the lateral or fixation sutures. The fastening of the threads upon the plate is done by the lock stitch by another thread passing through the perforations in the shape of a loop and fastened at the back. I now keep on hand three different sizes of the plates. The largest size is used for gastro-enterostomy, the second for intestinal anastomosis, and the smallest plates are intended to be used in operation on children in cases of congenital stenosis of the intestines, invagination and other forms of intestinal obstruction where it becomes necessary to make an intestinal anastomosis. As a rule the central opening in the plate should correspond to the lumen of the organ which has become partially or completely obliterated by the cause which has produced the obstruction. Thus, in gastro-enterostomy the perforation in the plate should be as large as the lumen of a normal pylorus; in ileo-colostomy it should correspond in size with the lumen of the ileum. Messrs. Schorse & Co., 302 Chestnut street, Milwaukee, keep on hand different sizes of the plates preserved in a moist state, ready threaded, and furnish with each pair four straight Hagedorn's self-threading needles. Objection has been made against the bone plates to the effect that they are not always at hand when needed. But like catgut, silk, drainage tubes, and other essential materials used in the treatment of wounds, they should be kept on hand ready to be used in an emergency. The different kinds of rings devised by Abbe, Matas and Brokaw, as substitutes for the bone plates, lack some of the most important advantages possessed by the plates. Catgut is a material which, when brought in contact with the alkaline secretions of the intestinal canal, becomes, in a few hours, so soft and macerated that it cannot be relied upon as a support. All ring supports bring into apposition only a small area of serous surfaces, and the pressure is not equally distributed. Davis' catgut mats are superior to the catgut rings, but the material of which it is composed is so highly hygroscopic that when acted upon by the intestinal contents they swell up rapidly and become as soft as a rag in a few hours. I immersed one of the plates which Dr. Davis kindly sent me in a warm solution of common salt, and in three hours it had increased to three times its former thickness and had become so limpid that in the same condition in the intestinal canal it would furnish little or no support in maintaining uninterrupted apposition. The same objection applies to the catgut rings and catgut mats as to the dried bone plates, that when used in the dry state they increase rapidly in thickness from the imbibition of fluids, and as the sutures are unyielding the pressure thus produced may become a cause of pressure gangrene.

An extensive clinical experience and numerous experiments on animals have satisfied me that thus far no better material has been suggested for making the approximation plates than decalcified bone. Decalcified bone plates kept moist in an antiseptic solution do not increase in thickness by imbibition of fluids when used in the stomach or intestinal canal, and they serve as an efficient mechanical support in bringing together and maintaining accurate coaptation of large serous surfaces which it is intended to unite in establishing an intestinal anastomosis. The decalcified bone plates can be relied upon in maintaining equable surface pressure upon the tissues interposed between them for at least three or four days, which is the time required in obtaining a sufficiently firm union by cell proliferation from the apposed serous surfaces. Indestructible and inabsorbable material should never be used in the preparation of approximation plates, as such substances in the stomach or intestines, where they are used, may cause irritation, or even ulceration and perforation; or they may pass on and become impacted in the narrowed portion of the bowel. Dr. Stamm, of Fremont, O., made plates of the thin portion of the scapula of a calf, and used them in a gastro-enterostomy for carcinoma of the pylorus. The patient died forty days after the operation, and at the necropsy the plate inserted into the stomach was found unchanged in this viscus.

Incision of the bowel.— In ileo-colostomy the bowel is incised on the convex surface opposite the attachment of the mesentery and near the closed end, if the cæcum has been resected, and two or three inches from the obstruction, if the conditions do not require or justify an enterectomy. The incision must be large enough to readily admit the insertion of the plate without using any force, and yet not too large, as, if this mistake is made, the plate may escape through the incision after the sutures have been tied. Hæmorrhage from the visceral wound is usually slight and ceases spontaneously; but should it become necessary to arrest it, it is much better to

use the continuous catgut suture than to attempt to ligate the bleeding points. The best way to make the incision is to compress the bowel between the thumb and index finger of the left hand in a direction parallel to the organ, and then with a sharp-pointed bistoury perforate the wall of the bowel and cut from within outwards between the fingers in an upward direction.

Insertion and fixation of the plates.—As the incised bowel is supposed to be empty and kept so either by digital compression or by elastic constriction with a rubber band, there is no danger of fæcal extravasation taking place. Mucus and small particles of fæcal matter are removed with small pledgets of gauze or antiseptic cotton. The plate is inserted while the bowel is held in the same position as when the incision is made. The plate is inserted edgewise, and as it is completely in the lumen of the bowel, traction is made on the sutures in such a manner that the plate makes half a turn, so that its upper surface faces the wound. It is now accurately adjusted, so that its ends are equidistant from the angles of the visceral wound. The plate is then fixed in this location by transfixing the entire thickness of the wall of the bowel near the margin of the wound with the needle attached to the lateral or fixation suture.

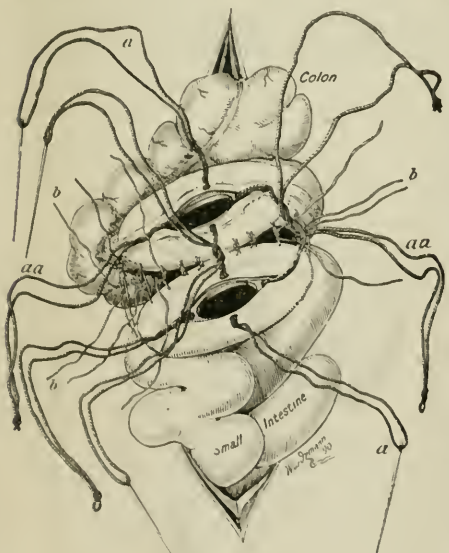


FIG. 2.—Ileo-colostomy without resection of cæcum. Showing plates in position, one in the ileum, the other in the colon. (*a*) lateral or transfixion sutures passed through the margin of the wound. (*aa*) end ligatures hanging out of the wound. (*b*) posterior row of superficial or Lembert sutures.

The lateral sutures are intended to draw the margins of the wound asunder after tying, and prevent the slipping of the plates, and for these reasons they merit the designation "fixation suture." The end sutures serve to retract the angles of the wound and assist in holding the coapted parts in apposition after they are tied. After all the sutures are tied the opening presents a diamond-shaped appearance.

Scarification of the serous surfaces.—In ileo-colostomy by approximation plates a maximum area of serous surfaces is brought together and should be kept in accurate contact by the plates until they have united by the interposition of new tissue derived from proliferating endothelial and connective tissue cells. If anything can be done to stimulate the process of regeneration, definitive healing is accomplished in a shorter time. It is a well known fact in surgery that approximation of intact serous surfaces does not result in the formation of a lesion. When the surgeon desires to secure union between serous surfaces he resorts to mechanical irritation for the purpose of inducing a circumscribed plastic peritonitis, which invariably results in adhesions and obliterations of the serous space. Reasoning from this analogy, I was induced to study experimentally the effects of traumatic irritation in hastening the formation of a lesion and cicatrization between apposed serous surfaces. The results of the experiments show that serous surfaces of the intestine which were scarified before apposition was made with bone plates formed adhesions earlier, and the definitive healing was accomplished in a much shorter time, than in cases where the peritoneum was left intact. In most of the cases the inflammatory process was limited to the portion of the bowel interposed between the plates. Without exception the adhesions formed were firmest and the definitive healing was initiated first when scarification was performed, results which clearly demonstrate the fact that the reparative process between serous surfaces which it is intended to unite is hastened by traumatic irritation. Traumatic irritation with the point of an aseptic needle is the most potent means to provoke a circumscribed plastic peritonitis, and is followed within a few hours by a copious exudation of plastic lymph, which, like a cement substance, mechanically agglutinates the coapted surfaces. The same measure, by destroying the continuity of the non-vascular endothelial layer of the peritoneum, brings at once in contact the vascular network of both sides and opens up a direct route for the new vessels, an important element in the rapid healing between the surfaces held in contact by the plates. Davis, of Birmingham, has made some adhesion experiments by scratching off the endothelial lining of the peritoneum, and claims that adhesions form more rapidly than after scarification. I should not feel warranted in depriving the peritoneum of the

histological elements which, above all others, take the most active part in the production of new tissue. In inflamed serous surfaces karyokinetic figures are seen earliest in the endothelial cells, and the inflammatory product from the fixed tissue cells are derived largely from this source. Scarification inflicts the necessary degree of traumatic irritation without loss of tissue, upon which depends so much in the subsequent process of repair. When the plates are *in situ* the serous surface of the bowel over an area corresponding to the size of the plates should be scarified with an aseptic needle. The scarification should not be so deep as to cause bleeding, but only deep enough to tear the endothelial lining. I am in the habit of making straight lines, which are crossed by other lines, mapping out, as it were, the endothelial surface into small squares representing a diminutive mosaic pavement.

Approximation of the intestines.—After both surfaces have been thoroughly scarified the intestines which it is intended to unite are brought together by an assistant in such a manner that the two wounds are directly opposite each other.

The approximation sutures are now properly arranged so that when they are to be tied the corresponding threads can be readily found. Before any of the sutures are tied it is well to unite the serous surfaces along the posterior margins of the plates with a few superficial sutures. (Fig. 2 b.) After this has been done, the posterior pair of fixation sutures is tied with sufficient firmness to approximate, but not to compress, the parts between them. The sutures are to be tied always in a square knot so as to prevent slipping of the knot. Next the pair of end sutures away from the operator is tied, and when this has been done the opposite pair is tied. All of the sutures are cut short as soon as they are tied. The last sutures to be tied are the remaining fixation sutures, and while these are being tightened the margins of the bowel are inverted between the plates with a director or probe. The cut ends of the last knot are pushed with a probe towards the opening. Approximation has now been completed and all that is left is to reinforce the action of the plates by suturing the serous surfaces over the anterior margins of the plates by a few stitches of the continued suture.

The part of the intestine exposed during the operation should now be thoroughly cleaned by irrigation with sterilized hot water, and after being well dried with an antiseptic sponge or dry gauze, the part clamped together by the bone plates is ready to be replaced into the abdominal cavity after having first thoroughly cleansed and dried the iliac fossa.

Anchoring of the seat of anastomosis.—As the blind end of the colon is to serve the part of the artificial cæcum in the future, and the new opening will serve as a substitute for the ileo-cæcal

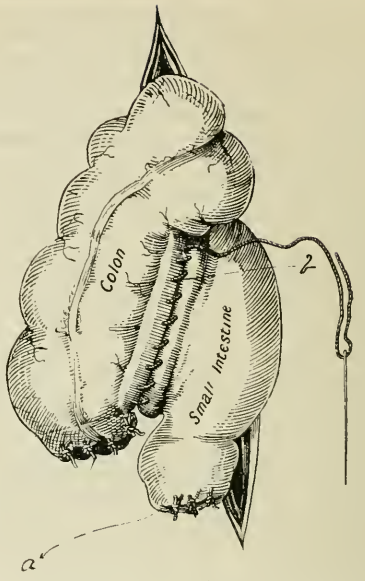


FIG. 3.—Ileo-colostomy as seen after resection of the cæcum. (*a*) Closed ends of the colon and ileum directed downwards; (*b*) serous surfaces over the anterior margins of the plates united by a number of stitches of the continued suture.

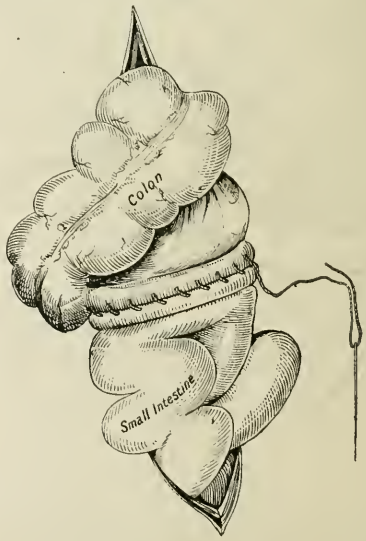


FIG. 4.—Ileo-colostomy, completed as seen without resection of the cæcum.

opening, these parts should be assigned the place occupied previously by the organs removed. Anchoring of the seat of anastomosis in the ileo-cæcal region is an important step of the operation, as it will secure the most favorable anatomical and physical conditions for restoration of the normal fæcal circulation, and will at the same time keep the parts in the neighborhood of the wound, an important matter should anything go wrong at the seat of operation. Should perforation or suppuration occur these conditions are more readily accessible and can be more efficiently dealt with in the right ileac region than if the anastomosed parts are dragged away into some more remote part of the abdominal cavity, perhaps buried among a number of coils of the small intestines. The anchoring can be readily done by passing a small suture through the mesentery in the direction of the blood-vessels opposite the new opening on one side and through the peritoneum and the subserous structures at the proper point of the other, and tying with sufficient firmness to bring the parts into apposition. Scarification of a limited area of peritoneum on both sides will hasten the formation of adhesions and increase their power of resistance.

Drainage—Drainage is always indicated when a considerable portion of the retro-peritoneal space has been laid bare, and it could never be dispensed with if in the course of a resection of a considerable portion of the large intestine where many ligatures have to be used in controlling the hemorrhage from the mesenteric vessels. If the incision is made in the inguinal region efficient and direct drainage can be established through the lower angle of the wound. The best drainage is secured by combining tubular with capillary drainage. This can be done by protecting the intestines and the peritoneum in the vicinity of the lower portion of the wound with several layers of idoform gauze, which is used in the form of a ring through which is inserted a glass drain, the size of the little finger, with small lateral perforations in its distal end. A glass drain should reach sufficiently far to carry away the wound secretions from the seat of visceral approximation. With the bowel anchored in the ileo-cæcal region, the gauze tampon surrounding it, and the glass drain in close proximity, abundant precautions have peen provided for to prevent the accumulation of intra-peritoneal effusion, and in the possible event of fæcal extravasation a direct outlet for its escape has been established. Unless special indications arise, drainage can be dispensed with after the third day, as at this time firm adhesions between the apposed intestines have taken place, and transudation will have ceased.

Closure of abdominal incision.—The closure of an incision in the abdominal walls in any other place than the median line requires special care. An incision through the different muscular layers of the abdominal wall closed in the ordinary manner with one row of sutures is very liable to be followed later by the formation of a ventral hernia, on account of the peritoneum on each side of the wound becoming everted, thus interfering with the accurate coaptation of the muscular layers and the resulting cicatrix only too often permanently separates the muscles. To prevent the interposition of the peritoneum between the muscles it is absolutely necessary to unite it separately with fine silk sutures, which are cut short and buried. The remaining portion of the wound can be accurately approximated by a second row of sutures. These sutures should not include more than one-twelfth of an inch of the skin and embrace all of the muscular layers. If, as is usually done, more skin is included, there is danger of the skin becoming inverted, which again interferes with an ideal healing of the wound. A few superficial stitches between the deep sutures will secure accurate coaptation between the superficial portion of the margin of the wound.

Dressing of the wound.—In operations where drainage is unnecessary the wound is dusted with iodoform and covered with a strip of protective silk. Several layers of iodoform gauze are then applied and over these a thick compress of salicylated cotton, all of which is retained by a number of strips of rubber adhesive plaster, long enough to encircle two-thirds of the circumference of the body. As an additional protection against subsequent infection, and as a means of exercising equable compression, a thick layer of ordinary cotton is applied over this dressing and retained by an ordinary abdominal binder or roller bandage. If it is necessary to establish drainage a somewhat similar but less bulky dressing is applied, but a space is left for the drainage tube which is kept aseptic by keeping it closed with a plug of antiseptic cotton. This is removed as often as required, every three to six hours, and the fluid which has accumulated is withdrawn with an ordinary syringe to the nozzle of which an aseptic rubber tube is attached. I have always been in the habit after exhaustion of the glass tube to fill it again with a warm physiological solution of salt which is withdrawn in a similar manner.

After-treatment.—During the first twenty-four hours the patient is nourished exclusively by rectal feeding. Thirst is quenched with small pieces of ice in the mouth, sipping of hot water, and if there is much prostration, brandy and water are given. Peristaltic action of the bowels is suspended by a few small doses of opium. The bowels should not move for at least forty-eight hours. Should at this time tympanites set in, a mild laxative, such as castor oil or one of the mild saline cathartics, can be given, and the

action hastened if required by a small stimulating rectal enema. On the second day small quantities of fluid nourishment can be given by the mouth, and in the course of a week a light solid diet is prescribed. The sutures are removed at the end of the first week, but the external support by strips of adhesive plaster and a well-fitting binder must be continued until the completion of the definitive healing of the abdominal wound which requires at least three weeks. The patient should not be allowed to sit up or leave his bed before the expiration of this time. The plates will come away with the fæcal discharges about a week after the operation.

CONCLUSIONS.

1. Resection of the cæcum for carcinoma can be done with a fair prospect of a permanent cure if the operation is performed before infiltration of the retro peritoneal and mesenteric glands has occurred.

2. Ileo-colostomy with absorbable perforated approximation plates is the best method of restoring the continuity of the intestinal canal after excision of the cæcum.

2. The best material for approximation plates is decalcified bone preserved in an antiseptic solution.

4. Hygroscopic and indestructible or inabsorbable material should not be used in the preparation of approximation plates or rings as the former may cause pressure gangrene, and the latter may prove a source of danger by remaining permanently as a foreign body in the organ in which it has been introduced.

5. Ileo-colostomy without resecection of the cæcum is indicated in cases of intestinal obstruction from inoperable carcinoma of the cæcum, irreducible invagination without perforation or evidences of gangrene and in cicatricial stenosis in the ileo-cæcal region not amenable to a plastic operation.

6. Scarification of the serous surfaces interposed between the bone plates is the most reliable means of hastening the formation of adhesions and of shortening the process of definitive healing.

7. Resection of the cæcum and ileo-colostomy with or without enterectomy should be done through a lateral incision, extending from near the middle of Poupart's ligament to a point halfway between the anterior superior spinous process of the ilium and the umbilicus.

8. Suturing of the serous surfaces just beyond the margins of the bone plates renders material aid in maintaining apposition between the serous surfaces which it is intended to unite and furnishes an additional safeguard against fæcal extravasation.

9. Anchoring of the approximated parts in the ileo-cæcal region with a mesenteric-peritoneal suture should be done in ileo-colostomy after resection of the cæcum.

CONCUSSION OF THE SPINAL CORD, BRAIN, ETC.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association at Nashville, Tenn., May 20, 1890.

BY B. A. WATSON, A.M., M.D.,

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The term "concussion of the spinal cord" is commonly used in a very loose and indefinite manner. In some instances its use is restricted to those cases in which the functions of the cord are temporarily disturbed, independently of any discoverable lesions; while in other instances it is made to include cases in which there are hæmorrhagic extravasations into the substance of the cord, or even a contusion of its membranes. Mr. Erichsen has employed the term in even a broader sense than that which includes the punctate hæmorrhages, etc., since he embraces the following conditions: 1. A functional disorder. 2. Compression of the cord from extravasation; compression of the cord by inflammatory exudations; nutritive cord alterations. It is therefore apparent that Mr. Erichsen, when he employs the term "concussion of the spine," intends to include all morbid conditions arising either primarily or secondarily from traumatic injuries not connected with fractures or dislocation of the vertebræ. In our consideration of "Concussion of the Spinal Cord, Brain, etc.," we shall include all those morbid and pathological conditions arising from the application of concussive force to these organs. By concussive force we mean that agitation communicated to one organ by a fall or blow upon another. For the purpose of illustrating this idea, let the force be applied to the nates while the spinal column is maintained in an erect position, then there will be carried along this bony structure a vibratory motion which will also be imparted in varying degrees to the adjacent soft parts. A careful study of the anatomical structure of the spinal column and cord, their relation to each other, and likewise their relation to other organs, especially the brain, lungs, liver and kidneys, when examined in connection with the seat of the application of the concussive force, possesses a very high degree of interest. It will be readily observed that the normal curves of the spinal column cannot fail to exert an influence on the localization and character of the pathological lesions produced by a concussive force applied to the nates. It is likewise true that these curves exert a modifying influence on *all the lesions* resulting from concussive force; but the same can only be intelligently studied when the surgeon fully understands the nature of the power employed and the locality to which it has been applied. In order to illustrate this subject more clearly the reader's attention is directed to the following cut, in which the antero-posterior curves of the spinal column may be

studied. These curves correspond to the different regions of the column, and are designated cervical, dorsal, lumbar and pelvic.

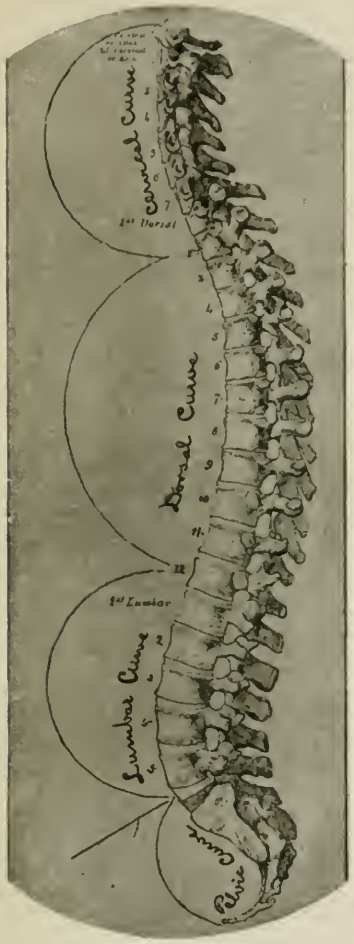


FIG. 1.—Lateral view of the spine

The examination of this figure makes it readily apparent that if the concussive force is applied to the nates while the spinal column is maintained in the erect position, the greatest power will be brought to bear on the sacro-vertebral articulation. The chief factors entering into this calculation are leverage and the superincumbent weight of the body. It likewise logically follows that if the centre of gravity be thrown either forward or backward the resulting traumatisms may be materially modified. I am now prepared to show by the results of numerous experiments that the conclusion which I have expressed is strictly correct.

In a brochure which I have recently published, entitled, "An Experimental Study of Lesions Arising from Severe Concussions," there will be found a report of 141 experiments. In 135 of these experiments the concussive force was received on the nates, and besides the other traumatisms thus produced there were eleven cases of rupture of the spinal ligaments, and ten of this number occurred at the sacro-vertebral articulation, and the other between the fifth and sixth cervical vertebræ. It was still further observed that in six cases there was a considerable amount of blood extravasated within the pelvic cavity, and in five cases there were ecchimoses in the psoas muscles. The examination of the report of these experiments also shows that there were four cases of fractures involving the spinal vertebræ, and two of these were located in the lumbar region. I think it will now be readily admitted that true concussive force exerts the highest possible degree of potency on the spinal cord when applied to the nates while the body is maintained in the erect position; and, furthermore, that the most marked and numerous traumatic lesions observed in these cases are associated with injuries of the spinal column in the lumbar region. Let us now enter on the consideration of several important questions bearing on the etiology of spinal concussion.

1. Are there any cases of this morbid condition arising from concussive force in which the functions of the spinal cord are temporarily disturbed, independently of any discoverable lesions?

2. Are any of the following pathological conditions, viz.: punctate hæmorrhages, hyperæmia, blood in the perivascular spaces of the gray matter, etc., ever produced by concussive force while the bony walls of the spinal column and the ligaments of the same remain in the normal state?

3. How, and by what sort of force, are these morbid conditions most frequently caused?

Let us here attempt a seriatim reply to these queries. I therefore think it wise to inform my hearers that in my consideration of these questions I shall view my subject from the standpoint of a surgeon, rather than that of an alienist. The essential difference between the surgeon and the alienist is that the former presents his views from the standpoint of demonstrated facts, while the latter accepts a theory and then attempts to make all else conform to the god which he has erected. In other words, surgery is to-day essentially an exact science, while insanity rests entirely on a speculative basis, and, therefore, it can only be regarded as a pseudo science.

It will be here observed that when this ques-

tion is examined from a pathological standpoint there *can be only negative evidence adduced*, and this would scarcely justify an affirmative answer. My experimental studies have added nothing in the affirmative, but, on the contrary, have materially strengthened the negative side of the question. I am therefore constrained, by the want of space, to answer this question negatively, although it is quite possible that by so acting I open myself to the charge of dogmatism.

In attempting an answer to the second query I shall preface my efforts by calling attention to the anatomical structure of the spinal column and cord, and their relations to each other, and afterwards bring forwards the results of my experimental studies for the further elucidation of this important question.

It can be readily seen that no part of the human skeleton plays a more important rôle in the preservation of life by protection of vital organs than the spinal column. Within this bony column is situated the spinal canal, beautifully and perfectly arranged for the reception of the spinal cord. This highly important structure is composed of thirty-three vertebræ, and these are artistically and strongly fitted together in such a manner as to allow every necessary movement, since the spinal column is both flexious and flexible. The articular surfaces of the vertebræ are covered with cartilages exactly suited to their wants. The various bony processes projecting from the vertebræ serve as the point for the attachment of muscles, and at the same time as a *cheval de frise* in warding off blows from the citadel. The numerous heavy muscles of the back serve to cushion externally, and thus protect the spinal column. In addition to this they afford a support and protection to the deeper seated tissues, and likewise give the required motions.

The segmentation of the spinal column possesses, in some cases, when the concussive force is applied in certain directions, a highly important modifying effect. The cartilagenous coverings of the articular surfaces, and also, to some extent, the osseous structure of the vertebræ themselves, act as cushions or buffers, by which the concussive force is greatly diminished at each articulation. This principle has been long understood, and is now generally applied to all the passenger trains on railways. Let us now present a few practical points connected with the anatomy of the spinal canal and the spinal cord, without entering into a full consideration of the anatomical structure of these parts, which can be readily examined by a reference to the text books on this subject. The spinal canal serves for the passage of the spinal cord, and presents everywhere a markedly smooth and even surface, which is lined by the medullary membrane. It is also so large that the spinal cord and its membranes are at no point adherent or in contact with it; in fact they do not nearly fill it. The bony wall of this canal is everywhere cushioned with connective or adipose tissue, and the intervening space is filled with spinal fluid. The spinal cord is wrapped by the spinal membranes, and this is surrounded by the spinal fluid, and every vertebral nerve is so placed as to act as a most efficient stay, thus preventing any swaying or other motion. Dr. Byron Bramwell, of Edinburgh, says: "The relationship of the cord and the nerve roots to the spinal membranes (dura, arachnoid and pia) is of great practical importance, and is as follows: The spinal dura mater is a dense, tough membrane, which is loosely attached externally to the bones of the spinal canal, being separated from the periosteum by loose areolar tissue, fat cells and blood vessels, which forms a loose covering or sheath for the spinal cord and its nerve roots, surrounded by the pia, arachnoid and spinal fluid."[1] The following illustration, it is thought, will greatly facilitate the study of the relationship of the cord and nerve roots to the spinal membrane, while it also affords a very correct idea of the relation of the spinal cord to the spinal column and other important parts.

Let us now turn our attention to certain anatomical peculiarities which possess important relative bearings on concussion in these organs. We have already observed that the spinal cord is wonderfully protected against any injury from concussive force. It will now be seen that the anatomical peculiarities of the surroundings of the brain especially endanger the safety of this organ from that force. It is stated in the standard text books on human anatomy that the weight of the spinal cord is about thirty-three per cent. of the weight of the brain.

The weight of the brain, being so much greater than that of the spinal cord, increases greatly the liability of this organ to injury from concussive force. All the advantages arising from the buffer action, which has been previously mentioned, is lost, in case the concussive force is applied to the cranium, and the whole momentum of the blow will be transmitted directly from the skull to the encephalon.

Furthermore, we have called attention to the fact that the spinal canal is everywhere cushioned with areolar and adipose tissue, and likewise that the space intervening between this bony wall and the spinal cord is filled with spinal fluid. The encephalon, on the contrary, possesses no such protection against concussive force. In this case the membranes of the brain are placed in immediate contact with the bony walls of the cranium, without the intervention of soft tissue cushions or the presence of a water bed. The following cut presents a view of a portion of the encephalon, and likewise the entire spinal cord in its

[1] "Diseases of the Spinal Cord," p. 14 *et seq.*, 2d edition, 1884.

relation to the spinal nerve roots and some of the other surrounding parts.



FIGURE 2.

Our own experimental work was done on dogs; and, therefore, that the anatomical peculiarities of these animals may be compared with those of man, we have here introduced the following illustration, which presents both the anterior and posterior view of the spinal cord, spinal nerve roots, etc.

The whole number of these experiments were 141, but there were only 46 of these cases in which pathological lesions were produced in the cerebro-spinal axis or its membranes.

There were twenty of these forty-six cases in which the post mortem examination distinctly



FIGURE 3.

revealed a want of continuity in the spinal column, and these complicating injuries were as follows: Rupture of the vertebral ligaments, 11; fractions involving the bodies of the vertebræ, 5; stretching of the vertebral ligaments, 4. It will now be observed that there are twenty-six cases in which the spinal column apparently remained uninjured. There were four cases in these twenty-six which were complicated with

lesions which quickly terminated in death. It will likewise be seen by a reference to the accompanying explanatory notes[1] that there are six other cases included in our total of cerebro-spinal lesions where the question of the causation of these pathological changes justly raises the query—shall they not be excluded in this enumeration?[2]

Notwithstanding all this it must be admitted that these experiments have conclusively shown that pathological changes in the spinal cord, corresponding to those mentioned in the second query (2), may be produced by concussive force, while the bony walls of the spinal column and its ligaments remain in their normal state. The answer of the second query likewise includes in some degree the reply to the third question, since it shows that in the spinal cord concussive

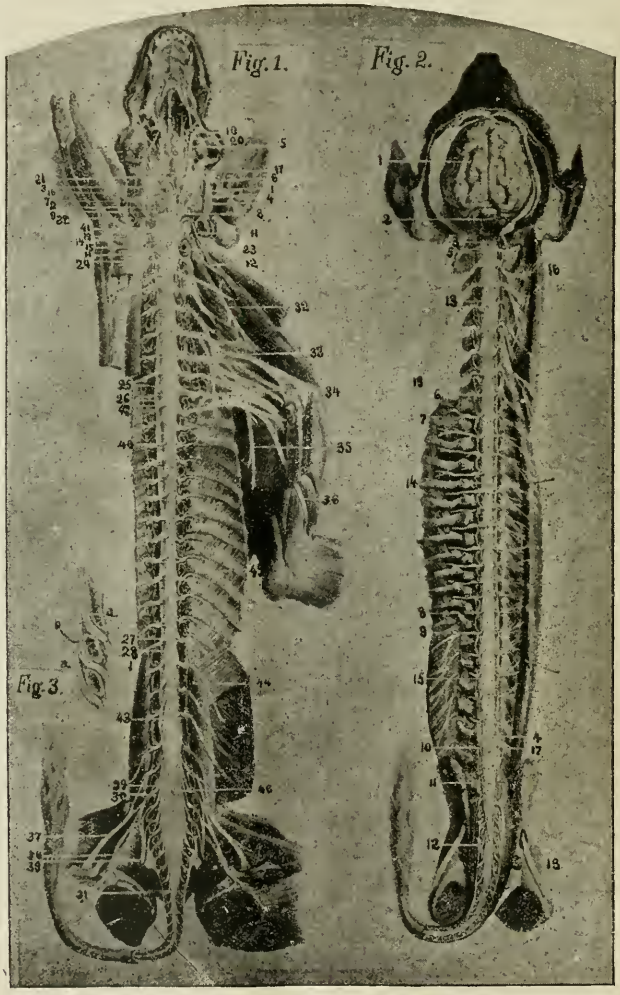


FIGURE 4.

force may produce pathological changes. In fact, it must be self-evident to us that these pathological changes occurring when there is neither a fracture of any portion of the spinal column, a rupture of the spinal ligaments, or a stretching of the same can only be caused by a true concussive force.

The next point demonstrated by our experimental studies is, that the force required for the production of these lesions must be comparatively very great, since only a limited number of these injuries resulted from a large number of experiments, although the force employed was highly efficient, as is shown by the production of severe and numerous traumatisms in the other organs (4).

In this connection it seems quite proper to call attention to the fact that the more limited the area to which the concussive force is applied, while the force remains otherwise unchanged, the more concentrated and destructive will be the effects produced by it, especially on animal bodies. It may therefore be logically assumed that the same concussive force when applied only to the nates will be much more effective than it would be if distributed over the greater portion of the posterior surface of the body. Bearing directly on this point is the fact that I made six experiments in which the blows were delivered on the posterior surface of the body—along the course of the spinal column, which produced no evidence of any concussion.

I will here affirm that my anatomical and experimental studies of this subject have rendered me absolutely skeptical in regard to the production of pathological lesions in the spinal cord by any concussive force applied evenly over the greater portion of the posterior surface of the body. It must, however, be admitted, that if the concussive force be complicated with any other power which destroyed the continuity of the spinal column, then pathological changes in the spinal cord would be very likely to follow, although this is not an invariable result. True concussive force when thus applied would invariably produce death by traumatic lesions in other organs before its pathological effects would be manifested in the spinal cord. It may therefore be confidently asserted that these pathological changes in the spinal cord are commonly produced by a compound force.

Let us suppose for the purpose of illustrating our views, that the spinal column has been struck by a musket ball which has in some degree impaired its external continuity without producing any lesion in the osseous tissues of the canal; but there are discovered numerous pathological changes in the cord, how are these to be explained?

It will readily be admitted that these lesions are produced in many casss by a direct and concentrated concussive force applied to the spinal column which has been transmitted to the spinal cord.

It will not, however, be claimed by any one that this injury done to the spinal column resulted from concussive force. It will here be acknowledged by all that the injury done to the bony structures was caused by the projectile force given to the bullet by the explosive compound. In other cases a sudden wrench or strain, complicated or not with concussive force, may give rise to similar lesions in the spinal cord.

Here, again, he who carefully studies the anatomy of these parts will be compelled to acknowledge that great force, even of this sort, will be required to produce pathological changes in a healthy spinal cord. Observe the wonderful interlocking and bracing of these bony segments or vertebræ which form the spinal column. Behold the bony processes or projections thrown out in various directions from the bodies of the vertebræ to protect them from direct force! In addition to all this, contemplate the protection afforded by surrounding and covering these with heavy muscular cushions. It now becomes apparent to us that no trivial jar, twist or strain can result in any injury to the healthy cord; but, on the contrary, it is self-evident that an extraordinary force will be required to produce pathological changes in this centre, a power which can never fail to do serious injury to other organs which are not so well protected. This point is clearly brought out in my experimental work, where I made 141 experiments especially directed to the production of lesions in the cerebro-spinal axis, studiously avoiding, so far as possible, the production of injuries in other parts of the body. The traumatisms were carefully delivered on that part of the body where the greatest portion of the force would be expended on the spinal column; and what was the result? There were more than three times as many lesions produced in the other organs of the body as in the cerebro-spinal axis. The query suggested by these results is, that if severe traumatisms inflicted especially for the purpose of producing lesions in the spinal cord give us so small a ratio, how frequently might pathological changes be expected to occur in this centre in injuries arising from miscellaneous accidents? It is true that no reply approximating to a mathematical correctness can be here attempted; but it may be reasonably inferred that their occurrence will be very rare, even exceptional, unless the force applied has involved the continuity of the spinal column. In the examination of these accidents the surgeon's attention is first directed to the nature of the force employed, and, secondly, to that part of the body on which it was expended.

It is by careful attention to these factors that this search for lesions will be primarily directed.

Thus far we have only studied the effects of concussive force when applied to the nates and the posterior regions of the body. It therefore remains for us to consider the probable effects which arise from the application of concussive force on the other regions of the body. The statements already made while describing the effects of concussive force when applied to the nates are applicable, within certain limits, to the same force when it is applied to the feet while the lower extremities and body are maintained in a fixed and erect position. But even under these circumstances there would be a considerable loss of power, referable to the buffer action in connection with the articulations in the lower extremities.

However, a much more important subject for our contemplation in this connection is contained in the following question: Will not flexion occur at the articulations in the lower extremities with so much promptitude, under these circumstances, as to wholly obviate all danger? I think there is very little doubt on this point, and, therefore, feel strongly inclined to believe that no pathological changes can ever be produced in the spinal cord by concussive force applied to the feet. Furthermore, it may be boldly asserted, on the basis of correct anatomical knowledge and experimental research, that no amount of concussive force can ever be applied to the anterior or lateral regions of the body, which will be attended with the slightest danger to the spinal cord; since that amount of force which would disturb in the slightest degree the functions of the cord *could not fail* to destroy life by injury to some of the abdominal or thoracic organs on which the power of the blow must be primarily received.

Having completed our study of the so-called "concussion of the spinal cord," from an anatomical and experimental standpoint, I am thoroughly convinced that neither pathological lesions, nor even functional disturbances, are ever produced in this centre, in a healthy cord, without the application of very great force. It is foolishly absurd to presume that these morbid conditions can have their origin in a slight jar, wrench, or even the application of a moderate concussive force.

My distinguished predecessor, Dr. N. P. Dandridge, Chairman of this Section at the last meeting, gave us an elegant paper modestly entitled, "Surgical Interference in Fractures of the Spine;" but the principles enunciated in it are equally applicable to the treatment of nearly all spinal injuries. I cannot refrain, at this point, from citing a portion of this paper, on which my experimental experience seems to have a very important bearing. Dr. Dandridge informs us: "It is well known that not only a considerable number of these cases escape death, but entirely recover all their functions, even after the existence of paralysis, incontinence and bed sores, existing for a variable length of time. In a valuable paper Burrill has investigated the results of all the cases which have occurred in the Boston City Hospital, eighty-two cases in all, of which eighteen survived. Divided into regions, we find twenty-eight cases of fracture of the cervical vertebræ gave two recoveries; twelve cases of fracture of the upper dorsal vertebræ, six recoveries; nineteen cases of fracture of the lower dorsal, one recovery; twenty-three cases of fracture of the lumbar vertebræ, ten recoveries. Of the sixty-four fatal cases thirty-five died within five days, eight in from five to ten days, and seven in from ten days to one month. Five of these cases were submitted to operation, all of which were promptly fatal. In the eighteen who survived, the result was good in nine, and in nine complete disability remained permanent. The especial value of Burrill's paper is that it is based on the entire number of cases treated in a single institution, and gives, therefore, more reliable data for deductions than statistics made up of isolated cases."

The statement made in this quotation, that not only a considerable number of cases of fracture of the spine escape death, but actually recover after having developed grave symptoms, is certainly not in accordance with the old preconceived notion. It has long been urged by many distinguished surgeons, among others, Abercrombie, Sir Ashley Cooper, Sir Charles Bell and John Hunter, that even slight injuries of the spinal cord were very apt to lead to fatal terminations. Mr. Erichsen[2] has asserted, in this connection, that "in many of the cases in which sensation is more affected than motion, or in which the principal lesion consists in a modification of sensation coming on immediately after the receipt of a blow on the back, there may be reason to suspect laceration of the gray matter, with extravasation of blood into it. Hammond mentions two cases in which incurable paraplegia followed supposed spinal hæmorrhage. Speedy death, however, most usually occurs as a consequence of such an injury."

The same author has also added that "Boyer had long since noticed the very interesting practical fact that when the interspinous ligaments were ruptured, in consequence of forcible flexion of the spine forwards, no fatal consequences usually ensue, the integrity of the parts being restored by rest; but that when the ligamenta subflava are torn through and the arches separated, paraplegia and death ensue. This he attributes to stretching of the spinal cord." Sir C. Bell, however, with great acuteness, has pointed out the error of this explanation, and states that "it is the progress of inflammation to the spinal mar-

[2] "Concussion of the Spine, Nervous Shock, etc.," by John E. Erichsen, pp. 71 and 74. Wm. Wood & Co., New York, 1875.

row, and not the pressure or extension of it, which makes these cases of subluxation and breach of the tube fatal." "There can be no doubt that this explanation is the correct one, and that when once the spinal canal is forcibly torn open, fatal inflammation will spread to the meninges and to the medulla itself."

It will be observed that these quotations from Mr. Erichsen's work are not in harmony with the statements made by Dr. Dandridge. In fact we discover here about the same difference which marks the writings of the first half of this century on abdominal surgery, and those of the present day on the same subject. My own experimental studies have an important bearing on this matter of difference between Dr. Dandridge and Mr. Erichsen, and therefore I shall here state briefly some of my observations. Permit me, therefore, to transcribe from my brochure the following:

February 11. Experiment 4. Normal condition; mongrel, bull, male, æt. about five years; weight, 51½ pounds; temperature, 102.2°; pupils natural; traumatized. The animal walked with some difficulty, apparently weakened in the hind legs. Pupils were slightly dilated.

Feb. 12. Temperature, 102°; pupils normal; the symptoms more marked to-day than yesterday. The animal stood on his hind legs with much difficulty; walked with an unsteady gait; toilet neglected; eyes dull; ate and drank, and was evidently suffering from incomplete paraplegia.

Feb. 13. Temperature, 101°; pupils normal; some slight improvement in other respects.

Feb. 14. Temperature, 100.5°; pupils normal; ate and drank fairly well.

Feb. 15. Temperature, 101.8°; pupils normal.

Feb. 16. Temperature, 99°; pupils normal. There had been some improvement in the paraplegia.

Feb. 17. Temperature, 100.6°; pupils normal.

Feb. 18. Temperature, 100°; pupils normal.

Feb. 19. Temperature, 102°; pupils normal.

Feb. 20. Temperature, 100.7°; pupils normal.

Feb. 21. Temperature, 100°; pupils normal.

Feb. 22. Temperature, 101°; pupils normal.

Feb. 23. Temperature, 100.8°; pupils normal.

Feb. 24. Temperature, 101.6°; pupils normal.

Post mortem.—This autopsy was made promptly after the examination recorded on the 24th. There was found a simple fracture of the body of the last lumbar vertebra, external to which was a large blood clot, some part of which had evidently been absorbed, while the cauda equina showed signs of pressure from the coagulated blood, but none of an inflammatory character. There was also congestion of the cortical substance of both kidneys and the lining membrane of the bladder.

Microscopical report.—The brain was incised in several places, and it was found to be moderately hyperæmic; otherwise normal. There was general hyperæmia of the cord. The ganglionic cells were less distinct than in normal cords, less defined from their surroundings. The nerve ends were less sharply defined in the anterior and posterior columns, near the median commissure, than in the rest of the cord. This was more marked in the lumbar region.

Observations.—It is highly important to observe that in the case of this animal, the improvement was steady after the third day of the receipt of the traumatism until his death. In fact, so marked had been the progress, that I am fully assured, that had the dog been left to unaided nature, he would have entirely recovered. I will also add to the above record a few extracts from the same source, which will include *all the other cases* of fractures involving the spinal column which occurred in my 141 experiments. . .

First Series.—Experiment 3—traumatised—complete paraplegia. The hind legs absolutely powerless, but the animal drags himself, with much effort, over the floor with his fore legs.

Post-mortem.—This examination revealed a comminuted fracture of the spinous process and body of the seventh dorsal vertebra. The spinal cord was exposed, and found to be completely crushed at this point, showing the result, likewise, of inflammatory action in the congested and softened condition, which extended in both directions away from the seat of injury one inch or more.[3] . . .

Microscopical Report.—There was a break in the dorsal region of the cord. Above and below this break the cord was softened and intensely hyperæmic. The central canal was dilated with blood. The cord was intensely hyperæmic throughout. In the cervical and lower lumbar regions no special change was noticed except the hyperæmia.

Second Series.—Experiment 2. . . . Traumatised—Paraplegia. . . . Post-mortem.—This examination revealed the following: A simple fracture in the body of a vertebra, in the upper half of the lumbar region; the injury to the spinal cord was very marked at this point. There was likewise found within the peritoneal cavity about two ounces of coagulated blood directly over the psoas muscles; these muscles were ecchymosed, the right more than the left. Both kidneys were congested. Meninges of the brain congested, especially over the occipital region; spinal cord in a similar condition. . . .

Microscopical Report.—Brain intensely hyperæmic otherwise normal. The cord was hyperæmic throughout. It had not hardened well,

[3] The above record will, it is thought, enable the reader, to form his own opinion in regard to the causation in these cases, while the whole number interrogated is limited to six. The total number which terminated quickly in death were eight, while there were only four of these, in which there were found any lesions in the cerebro-spinal axis. See brochure, page 71, for complicating lesions.

and the outlines of the fibres were indistinct, whether cut longitudinally or transversely. The ganglionic cells were perfectly distinct.

Experiment 5.—Traumatised—Incomplete paraplegia; pupils moderately dilated. Post-mortem.—This examination revealed the following lesions: Congestion of both kidneys; in the pelvic cavity there was a quantity of extravasated blood, a deep ecchymosis involving the whole of the left psoas muscle, marked congestion of the meninges covering the vertex of the brain, and a slight congestion over other portions, the brain itself somewhat hyperæmic, cranial fluid increased in quantity. The spinal cord was likewise hyperæmic. A comminuted fracture of the body of the last lumbar vertebra and the presence of a blood clot within the canal at this point. . . .

Microscopical Report.—"The material was not received." The injuries described in Experiment 3, First Series, would have sooner or later caused the death of the animal; but in the other cases recovery would have been the final termination in each instance. It would be very interesting in this connection to take up separately the eleven experiments in which there was a rupture of vertebral ligaments, in order to show the nature of the pathological lesions in each case, and likewise the other complications; but space will not permit; and therefore it is sufficient for me to say, that in each instance the improvement had been so marked before the animal was killed, as to justify me in asserting, that all of these animals would ultimately have recovered.

There still remains a single point connected with fractures and other lesions of the spinal column, to which I desire to call especially the attention of surgeons. My experimental studies have conclusively shown that in all severe injuries of the spinal column, cord, etc., there are complications involving more or less seriously, the organs within the thoracic, abdominal or pelvic cavities. I know of no reason why there should not be found similar complications in the human subject. In fact, I think it will be discovered when sought for in connection with spinal lesions.

EXPLANATORY NOTES AND REFERENCES.—A brochure entitled "An Experimental Study of Lesions Arising from Severe Concussions," by B. A. Watson, M.D., p. 67 *et seq.* Philadelphia: P. Blakiston, Son & Co.[1] The report of these cases may be found by a reference to Nos. 20, 22 and 35, First Series, and No. 64, Second Series. The immediate cause of death in case "No. 20 was a rupture of the aorta." . . . In 22 it was "chiefly due to deep lacerations in the lungs, injury of the liver, etc."

"The cause of death in the 35th Experiment existed in the rupture of the right auricle and left pulmonary artery." "In the 64th Experiment the cause of death was the laceration of the liver, which gave rise to a profuse hæmorrhage, although there were hæmorrhagic infarctions in the lungs and a pre-existing pneumonia;" . . . "The spinal and brain complications in the above-mentioned cases were as follows: In Experiment 22 there was intense hyperæmia of the brain and spinal cord, while in the 20th and 35th Experiments there were found small hæmorrhages into the gray matter of the cord. The complication in the 64th Experiment consisted of distension of the vessels of the membranes of the spinal cord, which had ruptured in several places, and hæmorrhages of small size had occurred in the surrounding tissue."

MEDICAL PROGRESS.

THE CONFLICT WITH PULMONARY TUBERCULOSIS.—In a paper read before a medical society of St. Petersburg, DR. MAX SCHMIDT describes all the modern methods employed in the treatment of tuberculosis, including Weigert's inhalations of hot air. He concludes that nearly all these remedies are inefficacious because they cannot be applied in sufficient strength without injury to the patient, or because they fail to penetrate the tissues sufficiently to reach the bacilli. It remains for phthisical subjects then to content themselves with caring for their health by means of the inhalation of relatively pure air, free from dust, by good strengthening nourishment, and by strict attention to the hygiene of the body. The author agrees entirely with Cornet regarding the etiology of the disease.

RENAL COMPLICATIONS IN WHOOPING-COUGH.—Some time ago DR. STEFANO MIRCOLO, in *London Med. Recorder*, pointed out that he had several times observed renal complications in whooping-cough. Thus, on one occasion, among ten children suffering from the disease, nephritis occurred in two cases, one of which died. The necropsy left no doubt as to the existence of the renal affection. During another outbreak, among thirty-seven cases nephritis developed in four. Two of these died, and in one a post-mortem examination was made. The kidneys were examined microscopically, and were seen to be in a

These forty-six cases of pathological changes involving the various parts of the cerebro-spinal axis occurred as follows: (1) brain, 1; (2) brain and spinal cord, 12; (3) spinal cord, 15; (4) cauda equina, 2; (5) membranes of the brain and spinal cord, 3; (6) Brain and spinal cord? 2; (7) brain and cauda equina? 1; (8) spinal cord? 2; (9) brain? 1; (10) spinal cord and the membranes of the brain, 5; (11) membranes of the spinal cord? 1; (12) membranes of the brain and spinal cord? 1.

The attention of the reader is here called to the fact that in my brochure I have stated that there were fifty cases in which pathological changes occurred in the cerebro-spinal axis, but a more careful examination of these reports justify me in limiting the number to forty-six.

[2] It will likewise be observed in the above classification of these pathological changes that in some instances the interrogation point has been placed after the classification clause. In the cases thus marked the author thinks there is a reasonable doubt whether the pathological changes observed were due to the traumatism or other complicating factors. Thus, in Experiment 10, First Series, the following facts are recorded: Post mortem.—"Visceral organs of the thorax and abdomen healthy, with the exception of the kidneys, which are both in a state of cystic degeneration. The meninges of the brain seem to be congested. The quantity of cerebral fluid apparently somewhat increased. No softening (apparent to the unaided eye) of the brain and spinal cord.

Microscopical Report.—Brain moderately congested. There are a few punctate hæmorrhages in the anterior horns of the lumbar region of the cord. The cord is hyperæmic throughout, but less so than in experiment 22." The record in the 17th Experiment, Second Series, reads as follows: Post mortem.—"This examination revealed the following lesions: Rupture of the bladder, abdominal cavity distended with urine, the organs contained within it all more or less inflamed, lungs contained numerous hæmorrhagic infarctions and were considerably inflamed. The meninges of the brain were markedly congested, blood clot of considerable size beneath the dura mater, spinal cord seemed congested."

Microscopical Report.—"The brain is intensely hyperæmic; there is no lesion of the nerve cells or fibers. There are hæmorrhages in the meshes of the fibrous tissue of the dura mater and upon its inner surface. The vessels of the cord are very greatly distended with blood, but there are no hæmorrhages and no lesions that can be distinguished in the ordinarily stained sections."

condition of severe parenchymatous nephritis. No microörganisms could be seen. Recently Dr. Mircolo has brought forward additional evidence on the subject. In a recent epidemic at Monterubbiano, of twenty-four patients, three died—one from suppression of urine, another from suffocation in a paroxysm of coughing, and a third from marasmus. In the two latter cases, although during life there were no symptoms of renal affection, on post-mortem venous stasis in the kidneys with commencing albuminuria was found. There was also a considerable amount of hæmorrhagic infiltration. Cultures of the kidney tissues gave negative results. Dr. Mircoli believes that the renal affection is due to venous stasis caused by obstruction of the vena cava through the violent paroxysms of coughing. According to him the kidney is affected, in whooping-cough, in 12 per cent. of cases occurring in children.—*Archives of Gynecology.*

Antipyresis.—Dr. Riess, of Berlin, believes that the antipyretic treatment of infection fever is the best method at our disposal. The neglect of this treatment in German practice during recent years has arisen rather from theoretical objections to its use than from practical experience. Certain views regarding the etiology of various infective diseases which have been derived from bacteriological study and which *a priori* oppose antipyretic treatment rest, in reality, upon an unsubstantial basis. Thus, the teaching that the rise of temperature from fever is a beneficent reaction of the organism against the morbific agent, finds only slight support in the investigations which have hitherto been made concerning the biological properties of the pathogenic microörganisms. Opposed to these are the well known experiments made thirty years ago regarding the favorable influence of antipyretic methods of treatment, such as the cold water treatment of typhoid fever. The author makes mention of the method which he has employed for many years with excellent results, *i. e.*, the permanent or protracted employment of tepid baths. The application of these is very simple. A temperature of 31° is suitable for the bath. When the bodily temperature falls to 37.5° or lower the patient is removed from the bath; if it rises above 38.5° he is again placed in the bath. If the temperature falls too slowly in the bath an occasional moderate dose of an antipyretic is given internally. In this manner the writer has treated over 1,000 cases of fever (inclusive of 809 cases of typhoid) in the Friedrichshain Hospital of Berlin. The author refers in detail to the most satisfactory experience which he has had in the use of the permanent tepid bath. By this method it is an easy matter to reduce the temperature and keep it at nearly the normal. The permanent baths are only required, as a rule, during the first few days, after which their duration is shortened until finally only a short evening bath is required. The mortality in this method has been 8.5 per cent., which corresponds to the lowest figures obtainable in the larger hospitals of Berlin. The average duration of the disease is shortened, the course is milder, the cerebral disturbances are surprisingly modified, complications and sequelæ are less numerous, relapses occurred in only 2.6 per cent. of the cases and were generally of a light character. Other acute diseases are also amenable to this method of treatment. The author believes that until we can find some causal antipyretic therapy for the diseases of infection, we must retain the symptomic method of treatment, to abandon which would be a most decided mistake.—*Wien. Med. Woch.*

The Physiological Action of Caffeine.—Messrs. Sée and Lapicque have formulated the following conclusions as the result of their study of the action of caffeine:

1. Caffeine in small repeated doses amounting to 60 centigrams per day may be advantageously prescribed to soldiers on the march, as it increases muscular action and promotes the activity of the motor nervous system, both cerebral and medullary. The result of this double action is to diminish the sensation of effort and to prevent fatigue.

2. It prevents shortness of breath, with resultant palpitation.

3. In this manner it supplies vigor to one who is engaged in severe and prolonged exercise.

4. By producing this excitement of the cerebrospinal motor system, upon which the increase of muscular tonicity depends, caffeine increases the consumption of carbon in the organism, and especially in the muscles, but does not diminish the loss of the nitrogenous elements, and is not an economizing agent.

5. Economy in general cannot be effected, in the case of the higher animals, in a complete manner, so as to prevent the disagreeable effects of fasting, except under conditions which cannot be realized—inaction or immobility. With caffeine the very opposite is observed; that is to say, stimulation that can only be maintained at the expense of the organism. It is by increasing combustion that caffeine promotes muscular activity.

6. Caffeine possesses no mysterious properties that enable it to replace food; it only substitutes the general tonic excitation that is produced by the ingestion of food. If, indeed, we admit that it is the immediate action of food that stimulates the stomach and nervous system, and that the immediate alimentary value of food is nothing, we could substitute one stimulant for another. Caffeine, far from economizing the reserve forces, cannot enable the exhausted subject to resume

his labors only by attacking those reserves whose destruction it hastens by excitation of the nervous system; through it the muscles, then the organism, quickly loses its nutritive stock, and caffeine cannot prevent it.

7. The immediate action of caffeine upon the heart and vessels appears to be quite different from what it is generally supposed to be. We are at present studying the whole xanthic series. We know from the investigations of Gauthier that this series comprises paraxanthine, theobromine and caffeine, the latter being merely methyltheobromine or trimethylxanthine. It is important to compare caffeine with theobromine before judging their relative cardiac and diuretic action.—*L'Union Méd.*

CURETTING OF THE UTERUS.—DR. SABAIL, in *Jour. de Méd.* Curetting and écuvillonage combined constitute an inoffensive operative procedure if strict antiseptic precautions are observed before, during, and after the operation. The author's experience of seventy cases has been unattended with accidents due to the surgical measures. The operation may be performed by any general practitioner of moderate skill. Recent circumuterine inflammation contraindicates its performance. In sixty of the cases the morbid condition was a result of labor or abortion, in four there was gonorrhœa, and in six interstitial fibroma or cancer. Of the gonorrhœal cases, two were complicated by oöphoro-salpingitis. As a means of diaguosis, curetting has been shown to be of great value. In fifty-five cases the operation resulted in a cure, and was followed by pregnancy in six in which sterility had previously existed. Perimetritis followed two of the operations. In two of the cancer cases the patients have remained in fair health for two or three years, the curetting being performed at suitable intervals. In the case of interstitial fibroma hæmorrhage recurred within a short time after the curetting. —*Arch. Gyn., Obstet. and Pæd.*

INOCULATION OF LUPUS.—At the weekly clinical conference of the physicians of the Hôpital St. Louis, M. A. TROUSSEAU presented (*Annales de Dermatologie et de Syphilographie*, September, 1889) two rabbits, into the eyes of which he had successfully inoculated some particles of lupus coming from the conjunctiva of a young woman. Upon the one rabbit an aseptic puncture was made at the margin of the cornea with a triangular knife, and through this opening a small particle of lupus tissue was introduced into the anterior chamber, just at the centre of the pupil, by means of a slender silver spatula; hernia of the iris being avoided by the instillation of eserine. There was no inflammatory reaction, the nodule gradually diminished in size, and eight days after its introduction was totally absorbed. During the ten days following nothing was noticeable. On the twelfth day following its complete absorption there could be seen a peculiar swelling, apparently a folding of the iris. Upon its surface there appeared some small white points which increased both in number and size, and assumed the aspect of true nodules. At the time of presentation of the animal the anterior chamber was filled with these yellowish deposits, some minute, others as large as peas.

In the other rabbit the inoculation was made into the corneal laminæ, and after eight or ten days was completely absorbed without any reactionary irritation. Fifteen days later a grayish point appeared in the cornea which increased in size, forming a yellowish tumor, elevating the anterior laminæ of the cornea. Bacilli were found. —*Amer. Jour. Med. Sciences.*

THE ETIOLOGY OF PARAMETRITIS. — BUMM (*Archiv für Gynäkologie*, Bd. xxxv, Heft 3) has made some important observations with the view of determining the true cause of so-called cellulitis. When pus is present it is much easier to decide this question than in the case of a simple serous exudation.

Cellulitis is usually divided into the infectious and the traumatic varieties, but the writer punctured a supposed traumatic exudation in five cases, two of which he found to be of gonorrhœal origin, while the fluid from the other three contained streptococci. Parametritis was induced artificially in rabbits, and in every instance streptococci were found in the exudation, even when there was no pus; hence the legitimate inference that *there is no purely traumatic cellulitis.* Whenever streptococci are present *there must be infection from without*; they are never found in the healthy genital secretions. Auto-infection is extremely improbable.

[The extreme importance of this unassuming paper is not at first appreciated. If the writer's deductions are correct, he has at length thrown some light upon a subject in which there has been more theorizing than on any other in the whole range of medicine—the nature and origin of pelvic cellulitis. As the result of his studies he reaches the same conclusion as many thoughtful gynecologists, that old indurations in the broad ligaments are in themselves comparatively harmless, and that the danger of exciting fresh inflammation in them by operating on the cervix uteri has been much exaggerated. As Bumm shows, where inflammation arises in the pelvic cellular tissue it is directly attributable, not to the operation, but to the operator—to *infection*, not to *traumatism.* Positive scientific facts like this accomplish more for the progress of gynecology than do the most plausible theories.—ED.] —Henry C. Coe, in *Amer. Jour. Med. Sciences.*

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FOR THE GOOD NAME OF MEDICINE.

In some remarks before a State Medical Society recently, a very well known literary man spoke in any thing but flattering terms of the scientific position of medicine. This sentiment is echoed in the public press and in drawing-room conversation. Medicine certainly is at the bar of public opinion. A crowd of ragged, emaciated and ghostly claimants demand the division of the estate, and they are each and all supported by a blatant and venal press and a lobby of ignorance, superstition and sentiment. The dignity and honor of medicine in our country is greatly abridged.

The fact that medicine broke loose from the alchemy and sorcery of the middle ages sufficiently explains the tendency of immature and unbalanced minds to revert to these ancestral types. History and poetry surround such examples of arrested mental development with the glamor of sentiment or the sophistry of antiquity, and the delusions of an emancipated sex furnish the necessary pabulum for daily subsistance.

The age of religious discussion and dissention has left its traces in the topography of our profession and especially in the minds of the common people. But at the beginning of the eighteenth century the impulse of great scientific awakening found its strongest ally in medicine. From its earliest beginnings physicians were almost universally devoted to the study of one or another of the sciences. In every department the most valuable contributions both in quantity and quality have been and are made by doctors of medicine. They are the result of labors carried on usually in the short intervals of leisure in professional duties. It is in the highest degree irrational to presume that the contributions which such men made at the same time to medicine were unscientific and empyrical. The methods which they used in their recreative studies were not only applicable to, but they were fully utilized in the study of medicine, as any one familiar with the subject will admit. The accusation that medicine is unscientific, narrow and bigoted, is denied by the most cursory review of our literature. That literature was, until the last thirty years, the principal storehouse of each of the natural sciences. The literature of almost every one of our various *ologies* from physics to psychology runs back for its wellspring to the archives of medicine, and each one of them finds its patrons and abettors to-day in the ranks of our profession. Medicine is a department of science which embraces and combines under one administration a large part of the provinces of biology, chemistry and sociology.

No other profession possesses such a literature as medicine. The literature of law is not small, but the bulk of it is prepared by paid officials, and is essential to the action of every superior court. The literature of theology is also the natural crystalization of the routine work of the clergy. But medicine has no rewards for its writers, and the original researches and experiments upon which the mass of it is based is not essential to the prosecution of professional work.

That medicine is not, from the nature of the case, a pure science, stands without saying. Its approximations correspond well with the complexity of its data, and especially with the complexity of the relations of that data. In medicine these relations reach their highest degree of complexity. Medicine is the focus of scientific thought and energy. Nor is medicine in our own land less representative and less purely scientific than elsewhere in the world. Although our age and our freedom from precedent has encouraged many absurd departures, in no other department of science, art or literature are Americans more respected and honored the world over. Among no other thinkers, actors and writers have we more illustrious citizens.

To assert that medicine is not to-day and in

these United States the most scientific of the professions, is to voice a depth of ignorance of what science and medicine are, which is incompatible with an unprejudiced and enquiring mind.

"ORIGINAL" WORK AND THE AMERICAN MEDICAL ASSOCIATION.

The wonderful strides made by the medical profession of this country in the last few years, are only equaled by the industrial and commercial progress everywhere manifest. In the early days, when the profession was engaged in battling with epidemic diseases, riding many miles to see a few scattered patients in sparsely settled neighborhoods, it was the so-called practical man that was needed—the man who wielded calomel and quinine rather than the test-tube and microscope. Now all this is changed. With increasing wealth and a denser population have come opportunities for other work. All over our land science schools and laboratories are springing up, filled with earnest workers, each striving to add his contribution, meagre though it be, to the sum of human knowledge.

It is to this class of patient workers that modern medicine owes so much, and for the encouragement of which every effort should be made. To a certain extent this is accomplished by endowments of educational institutions and laboratories, in other cases by offering prizes, but this latter plan has not been eminently successful. These efforts point to the fact that the value of this kind of work is recognized, and also that for the worker there is but an inadequate return for the time and money expended.

As at present organized, the Section work of the Association has but little room for the experimental pathologist or therapeutist. The work is largely confined to the consideration of practical matters, those which belong directly to the practice of medicine. To illustrate: one might present to the Section on Practice a valuable and useful paper upon the chemical examination of the blood, which would be well received and ably discussed, and yet the paper might not contain a single original idea. That same individual might have made some valuable observations upon the blood corpuscles of the lower animals or upon the chemistry of blood; these facts while standing alone are valueless, and for the clinician are so much useless scientific lumber.

But it is this kind of work that is rapidly raising the practice of medicine to the realm of an exact science, for every once in a while the great generalizer comes along who weaves these scattered fragments into a grand whole, deduces the law, and science has again advanced. The Association should recognize its lofty mission and grow as the profession grows, and now seems a fitting time for the special recognition of the experimental worker, either by the creation of a special Section, or by such other means as may seem desirable. THE JOURNAL is able to give wide publicity to this kind of work, more than it now receives, for much of it is practically buried in reports of laboratories and other occasional publications.

THE CREMATION OF THE INSANE.

Most of our readers, it is to be hoped, are acquainted with CHARLES LAMB'S "Dissertation on Roast Pig," and will remember the account he gives of the origin of that savory dish in the accidental burning of a Chinaman's dwelling, in which, as in later times was the custom in the Emerald Isle, quadrupeds and bipeds shared together the comforts of a home. In consequence of this accidental discovery, conflagrations became surprisingly frequent, and rates of insurance in the Flowery Kingdom rose to an alarming figure, until in the lapse of ages, it occurred to some genius that the same end could be attained by cheaper means, and the differentiation of the dwelling-house and the culinary fire was accomplished. It may, perhaps, be worth while to consider whether the time is not ripe for a similar division in the arrangements for the disposal of a class of the population which makes, every year, heavier demands on the attention alike of the philanthropist, and the tax-payer. Among the various plans which have been tried, none of which, apparently, has given universal satisfaction, that of cremation, if we may judge by the extent to which it is practiced, is growing in favor, and in this direction, as might be expected, the New World leads the van. A German physician, DR. LAEHR, has recently written a book on the history of psychiatry, in which, among other things, he furnishes statistics in regard to conflagrations in asylums for the insane. From the information collected by him it appears that, at the time at which he wrote,

there had been, in the United States, eight such fires attended with loss of life. In six of them, 114 lives were lost, and in two the numbers were not stated. In Canada, also, there had been a fire, with loss of twenty-six lives. In the Old World, on the other hand, he only found accounts of the loss of seventy-odd lives, in eleven fires. In England, for instance, there had been several lives—number not stated—lost in one fire; in France, ten lives in three fires, and in Germany four lives in two fires. Recent events, fresh in the minds of all our readers, have greatly increased this disparity, and we may now fearlessly boast that, during the present century, more than twice as many insane persons have been burned alive in the United States and Canada as in the remainder of the civilized world. It is to be hoped that the American alienists who attend the coming International Medical Congress will not fail to call attention to this fact, which is, in itself, a sufficient refutation of the charge sometimes made that they are behind the times.

Gratifying, as have been the results attained, it must, nevertheless, be admitted that there is room for improvement in the means employed. It would seem that sufficient experience has now been accumulated to demonstrate that the same building will not satisfactorily answer at once the purpose of a crematory and a hospital. For the former purpose the institutions at Longue Point and Chenango seem, it is true, to have been fairly efficient, but they can hardly be recommended on the score of cheapness, while such usefulness as they had for hospital purposes is now at an end. We therefore venture to suggest that, in the future, separate structures, or at least separate departments be provided for the two purposes, so that there need be no waste of fuel in cremation, and that such insane persons, if any, as shall be thought adapted to hospital treatment need not be, from time to time, deprived of shelter. The statistics above given seem to indicate a possibility of learning something, in the latter direction, from the effete despotisms of the Old World.

SPECIALISM IN NURSING.

The Lancet considers the point of the desirability of differentiating the work of nursing into varieties more or less numerous. The subject was brought into recent notice by a discussion at the British Nurses Association, when it became evident that opinion was greatly divided on the question. *The Lancet*, however, has clear views in opposition to a multiplying of distinctions in this field of work, and quotes with favorable comments the argument of MR. WARRINGTON HAWARD, presented before that Association at a meeting held in April. The training of nurses, he argued, should in all instances begin upon a basis of a sound general instruction, regardless of what, or any, superadded instruction in special departments. Excessive specialism, if it has injured medicine at all, has wrought its evils in practice rather than in training. "All 'round" is still the fundamental maxim of professional instruction, and "all 'round" should remain the precept in nursing. To induct those who are preparing to nurse the sick into a specialty, without first instilling correct general principles, is comparable to an ornate structure on a flimsy foundation. There is no need of denying that nursing requisites exist, especially in the case of the after-care of the major operations, for which the profession must employ persons of special aptitudes, but in their cases, not less than in those whose responsibilities are not so weighty, the necessary basis of thorough preliminary training should be held to be quite as important as that after-development which is fostered and patently matured in the chosen few who manifest the capacity and liking for work in special fields. Any specialism in nursing that comes about in this thorough and painstaking way is both welcome and highly prized.

EDITORIAL NOTES.

A NEW SECTION.—In connection with the report of the Committee on Dietetics a resolution presented at the General Session of the Association on Thursday, May 22, was adopted, by which a new Section was created and designated "The Section on Dietetics and Physiology."

THE PLATFORM CLEARED.—By resolution it was decided that in future the business of the General Sessions should be conducted solely upon the floor of the house. We incline to believe that this is a wise provision. In the excitement which is often incident to a running debate, position may have materially to do with the power of

a speaker to influence his hearers. Under such circumstances it is but just that all should be required to meet upon a common plane. Henceforth the Presiding officer, the Secretary, and possibly the Chairman of the Committee of Arrangements are to be heard from the platform, but all others are to be limited to the floor.

A MERITED VOTE OF THANKS.—The amount of correspondence which this year has fallen to the lot of our worthy secretary, Dr. Wm. B. Atkinson, in connection with the meeting at Nashville and the Congress at Berlin, has been simply enormous. He is to be congratulated for the successful manner in which this voluntary and onerous work has been accomplished, and the least that the Association in justice, could do, was to honor him with a unanimous vote of thanks.

HYPNOTISM IN BELGIUM MADE A MISDEMEANOR.—The Academy of Medicine of Brussels having memorialized the Belgian Government in condemnation of all public hypnotic exhibitions, a regulation has been adopted forbidding them. The only uses of hypnotism hereafter legally to be practiced will be medical and therapeutical. The practice of hypnosis on girls under the age of 18 years is made punishable by fine and imprisonment.

THE CORRECTION OF AN EVIL.—It coming to the knowledge of the Association that medical men were in the habit of attending its sessions and participating in its proceedings without having registered, and without paying their annual dues, a resolution was adopted directing that cards be prepared and issued at the place of registration, and that members be admitted only by card to the meetings of the Association, during the first two days of its annual meetings.

TIMELY AND GENEROUS BEQUESTS.—If capital shall serve the cause of the poor and the needy, as in the following instances, surely labor will have less cause for conflict or for complaint as the purposes of capitalists are better known.

The late George S. Pepper, of Philadelphia, by his munificent bestowments has rendered nearly every charitable institution in that city a debtor to his memory. Over half a million of dollars are left to the various hospitals for the relief of suffering and for the care of the sick poor. The name of George S. Pepper will long be held in grateful remembrance by his fellow citizens, and especially by those who in the hour of sorest need shall find in him their benefactor.

By the will of the late Segwald A. Quale, of Eau Claire, one million dollars is to be devoted to the founding and maintenance of a hospital for cripples and deformed persons in the city of Madison, Wis. Of such men as these it may well be said their charities ally them to immortality.

THE NASHVILLE MEETING AND THE NASHVILLE PRESS.—The annual meeting at Nashville was all the more enjoyable by reason of the active and able coöperation of the daily papers of that city. To the *Daily American* we are specially indebted for its full and remarkably correct reports of the meetings. Its final words are these:

THE DEPARTED DOCTORS.

The doctors, after a stay in our city enjoyable alike to citizens and guests, have gone away to their many homes. No gathering which ever took place in Nashville has to such an extent won the interest and high respect of our people, and whenever the members of the very learned profession desire again to turn their collective faces southward, the people of Nashville and of Tennessee will open even wider the doors of hearts and homes and give them cordial welcome.

PROGRESS OF CREMATION.—The number of cremations increases every year. In London, from 1884–1887, there was an average of only eight per year. In 1888 there were twenty-six, and in 1889 forty-six. During the present year there have been several each week. In the new Paris crematory there were only thirty-five voluntary cremations in 1889, but the number of dead-born children and cadavers from the hospitals and schools is so great that cremation goes on day and night without intermission. According to the *Journal d'Hygiène* 3,000 bodies were cremated in 1889. In Rome there were 119 cremations in 1886, 155 in 1887, and 202 in 1888.

NEW SYSTEM OF SEWERAGE IN NAPLES.—The *Revista Internazionale de Hygiene* gives an account of the new system of sewerage in Naples. The total length of the sewers is 76,000 metres, of which about half, or 35,700 metres, is quite new. The fall of the principal sewers does not exceed 5 in 1,000.

DR. CHAS. CHASSAIGNAC has been elected to the presidency of the New Orleans Medical Society, to succeed the late Dr. John P. Davidson.

TOPICS OF THE WEEK.

AMERICAN *vs.* FOREIGN PHYSICIANS.

I believe in some forms of protection, and, in my opinion, the American physician should be protected. Holders of foreign diplomas who come to America, should not be allowed any greater privileges than are accorded abroad to American physicians. The University of Berlin has recently refused to recognize any diplomas from United States medical colleges, and it has been announced that an American physician desiring to practice medicine in Prussia, must first take a regular course in a German College. "The French Minister of Public Instruction has declared officially that hereafter foreign doctors shall submit their diplomas to the judgment of the French faculties, which would then decide whether they were on a parity with those granted to French practitioners. Furthermore, foreign medical men should be required to undergo the final examinations to which French candidates for the qualification to practice have to submit themselves." One-sixth of the physicians in California are from foreign lands, and graduates of foreign schools, and I would like to see the next Legislature provide for an Examining Board, no member of which should belong to the faculty of a California college, whose duty it would be to require each person who applied for a license, with a foreign diploma as his credential, to pass an examination equivalent to the final examinations of our California medical colleges.—Dr. Walter Lindley, *Occidental Medical Times*.

IODOFORM EMULSION IN COLD ABSCESSES.

A recent number of the *Wiener klinische Wochenschrift* contains a paper by Professor Billroth on the treatment of cold abscesses and tuberculous caries. He says Mosetig v. Moorhof was the first to recommend iodoform as a local antiseptic and an anti-tuberculous remedy. Since 1881 Billroth himself has made an extensive use of the iodoform emulsion. The parenchymatous injections of such solutions, and the injections of them into abscesses, caused such severe and persistent pain that this method was soon abandoned in his clinic. The formula of the iodoform emulsion, as used by v. Moorhof, was first: R. Iodoform pur. 10.0; ol. ricini. ol. amygdalæ ää 15.0. The first formula used by Mikulicz was: R. Iodof. pur. 10.0; glycer. 80.0; oil of olives 40.0. Later on Moorhof recommended the following formula: R. Iodof. pur 50.0 tere c. glycer. 40.0; distilled water 10.0; gummi traganth., 0.30. The formula used by Mikulicz in Billroth's clinic differed from v. Moorhof's in that the latter contained considerably more iodoform than the former. As the addition of oil seemed to Billroth to be useless, he had only 10 grams of pulverized iodoform mixed with 100 grams of glycerine; the mixture had to be violently shaken before it was used. This emulsion could not, of course, be employed for parenchymatous injections. In 1881 Mikulicz reported two cases in the *Berliner klin. Wochenschrift*, in which he had injected the emulsion into cold abscesses of the thigh after opening them. There was considerable diminution of the abscess cavity after some weeks. Professor Billroth himself tried this method, and in 1884 the results were published by Fränkel. Of 20 cases, 18 were definitely cured, but in the other 2 the treatment was not successful. Professor Bruns, of Tübingen, also obtained very satisfactory results by this method. The anti-tuberculous influence of iodoform was clearly proved by these experiments, and if the effect of the powder when applied to carious foci was not so satisfactory, that was no doubt due to its not being long enough in contact with all parts of the walls of the abscess cavities and the bones. The emulsion, therefore, was clearly preferable in such cases. The results of this plan have exceeded Professor Billroth's most sanguine expectations, except in some abscesses taking origin from the vertebral column, in which the treatment seemed to be too dangerous to be tried. This method was practiced on almost all the bones, joints, and soft parts of the body, and in nearly all these cases results were obtained far surpassing all previous experience. The *technique* of the treatment is as follows: When operating upon the extremities Esmarch's bandage must be applied; when the cavity has been emptied it should be taken off. The cavity is then stuffed with iodoform gauze, and after all bleeding has ceased—it may last from half an hour to three-quarters of an hour—the emulsion is poured in and the wound stitched up. In this, as in all other operations, Professor Billroth insists on the most scrupulous antiseptic precautions; the skin must be washed with alcohol, ether, and sublimate, and the silk sutures must be completely sterilized. An incision is made through the skin and the soft parts over the abscess along the long diameter of the swelling. Incisions from the tuber ischii to the popliteal space, or from the latter to the heel, are not uncommon in these operations. A large pledget of iodoform gauze is then pushed into the abscess, and its inner surface firmly rubbed. The cavity is then washed with a 1 in 3,000 solution of sublimate. If there is a cavity in the bone this is energetically cleansed. The wound is next stitched up, except a large opening through which the emulsion is poured into the cavity of the abscess and the cavity of the bone respectively. Finally, the rest of the wound is closed with sutures, and the dressing applied. In most cases fever, lasting from three to four days, supervenes, and occasionally also there is rather high evening temperatures. The following types of cases are met with: 1. No pain, only some passing twinges following the operation; fever moderate. Under these conditions the dressing can be allowed to remain from two to three weeks. Recovery takes place by first intention. The sutures are then removed, and the dressing allowed to remain for about two weeks longer. 2. Sharp pain and severe fever. The dressing is taken off; bloody serum mixed with iodoform emulsion escapes from some parts between the sutures. The serum is pressed out; the sutures are allowed to remain, and slender drainage tubes are introduced into the openings. A new dressing is applied, which is removed after from three to seven days. When the discharge stops, the drainage tubes are removed. Healing by first intention takes place in the deep parts; the granulating

wound is dressed with an ointment; the small fistulæ are touched with nitrate of silver, and thus are soon closed. This is the most common course of events. 3. Pain increases on the second and third days after operation. Pure blood or bloody serum escapes from the wound; drainage and fresh dressing. Recovery without suppuration may occur even in these cases. 4. Stitches burst owing to great tension, and decomposition owing to streptococcus albus around the sutures. Treatment as above. 5. Continual fever and pain. Pus escapes from between the sutures. In this case the operation has not been really successful; cocci of suppuration have remained behind. The stitches are removed, drainage tubes inserted, and pure glycerine or iodoform emulsion poured in every second day. This, in most cases, causes pain and fever. Recovery takes place in from five to six weeks. 6. If after this time no sure signs of definite recovery are present, the operation must be repeated. The worst cases of very large abscesses and numerous fistulæ gave in Billroth's hands the best results, not merely proportionately but absolutely.—Vienna Cor. *British Medical Journal.*

DISPOSAL OF SEWAGE AND GARBAGE.

The subject of the pollution of sewage is one of growing importance as the population of our cities and towns increases, for these streams must more and more be the dependence of the people for household uses. The greatest harm resulting from sewage in streams is the pollution of the water for domestic purposes. But there are other evils, such as the destruction of fish, and the gradual obstruction of their channels. The principal rivers of the State flow through so many counties, that it is impracticable to find a solution of the problem in the action of local authorities, either separate or concerted, and in the near future our State Legislature must devise a general plan to stop the mischief. The impurities which now go to our streams are mainly the contents of the sewers, and partially the solid garbage hauled from premises. In cities along the coast, sewage flows into the sea with little regard to the ebb or flow of tide, and much of it is cast back upon the shore. It is therefore desirable to discharge during the ebb only. Many European towns are disposing of their sewage by irrigation with advantage, and in some cases even with a slight profit. For agricultural purposes, one acre of land is considered sufficient to dispose of the sewage of 100 persons. If the land be used for purification only, much less acreage will suffice. The charge of insalubrity against sewage farming is not sustained. Analysis of well water on these lands shows no organic impurity, demonstrating the thorough filtration of the water, with combined oxidation by the ground air, and appropriation of the matters in solution by the growing vegetation. Observation has not shown typhoid fever or diarrhœal complaints to be more prevalent on such lands. Bad management and neglect of under-drainage are responsible for most of the complaints made against this system. The disposal of garbage by cremation or by dessication has been found practicable, and comparatively inexpensive. Many of these crematories are in successful operation; the cost of the Mann furnace, at Montreal, is 25 cents a ton of ordinary refuse, and 75 cents for night soil. The Engle destructor in use at Des Moines and Minneapolis disposes of refuse largely composed of carcasses, for less than 20 cents a ton. The Shaw crematory in London, Eng., dries the refuse, which is then fed into the furnaces, so that when once started it becomes self-operating. The residue, amounting to about one-sixth of the original, is ground up for mortar, and a preliminary sorting of the refuse permits the saving of many substances, as iron, glass, rags, etc. Sufficient heat is developed to run a small steam engine used in connection with the furnace. —*Occidental Med. Times.*

ICHTHYOL IN GYNECOLOGY.

Dr. Freund, first assistant in the gynecological clinic at Strassburg, has found ichthyol of considerable use in parametritis, perimetritis with effusion, cicatrization of the vagina and os, chronic metritis, inflammations of the ovaries and Fallopian tubes, ulceration of the os and pruritus vulvæ. He uses the drug internally in the form of pills, and externally as a 5 per cent. solution in glycerine applied on cotton wool; also with lanolin as an application to the abdominal walls, and made up into suppositories with cacao butter. In many cases he has obtained excellent results, notably in one where there was an extensive effusion into the pouch of Douglas, which was entirely absorbed in sixteen days, ichthyol being used both internally and externally. In no case was any untoward result noted. The disagreeable smell of the ichthyol was covered by the addition of cumarin. —*The Lancet.*

BISULPHIDE OF CARBON IN DYSENTERY.

Dr. Jakobleff reports in the proceedings of a Russian provincial medical society that he has found great benefit in dysentery from the employment of bisulphide of carbon—of course largely diluted. The quantity given per diem was from three to five grains in half a tumbler of water or milk, with a little peppermint. First of all, however, one or two grains of calomel were administered hourly until calomel stools had been induced, and during this time enemata containing a grain and a half of sulphide of carbon in an ounce and a half of water were administered twice daily. Great improvement was produced, and frequently this was as rapid as it was marked, so that there could not be any doubt that it had been brought about by the bisulphide of carbon treatment.—*The Lancet.*

IODOFORM EMULSION IN COLD ABSCESS.

Dr. Jasinski, of Cracow, has treated eighty-six cases of cold abscess by means of injections through a trocar of iodoform emulsion with encouraging results. A certain number were cured by a single injection, others after two or three injections. In eleven cases after the injection the abscess broke, a large quantity of pus mixed with iodoform being discharged. These were all cured without any further surgical interference. In nineteen cases an incision had to be made, the cavity was then washed out with carbolized water, iodoform emulsion injected, and the wound sewn up after a drainage tube had been inserted. In some of these cases the injection had to be repeated several times. Though 180 grams of a 10 per cent. emulsion were injected at once no toxic symptoms were ever observed.—*The Lancet.*

PRACTICAL NOTES.

ALTERATIVE PILL.

In adults you will often meet with the following train of symptoms: Vomiting, coated tongue, foul breath, accompanied by more or less headache; in short, I may say an attack of biliousness or a bilious attack—but it differs in some respects from the cases in which calomel is indicated. Something is wanted to allay the pain, and for this purpose opium in small doses will be found useful. Again, we desire to add to the effect of the mercurial preparation by incorporating into our prescription some drug which will favor the activity of the liver and increase secretion. Ipecac answers our purpose admirably, and, fortunately, both of these drugs have the effect of obtunding the sensibility of the sensory nerves. Recalling the formula, it will be seen that it embraces practically the ingredients contained in an ordinary Dover's powder, except that it has in addition ½ gr. of blue mass.

℞. Pulv. opii, }
Pulv. ipecac, } gr. ½.
Massæ hydrargyri gr. ss.
M. et ft. tab. trit. No. 1.

If deemed best, calomel may be substituted for the blue mass. Taking it all in all, the value of this pill for the class of cases indicated can scarcely be overestimated. There is not sufficient opium to make the pill dangerous, and the same is true of the blue mass; but if they are taken too freely, or when taken for too long a time, we shall have the irritating effect of the ipecac, and vomiting will follow. It is surprising the number of cases in which this combination will be found available.—*N. Y. Med. Jour.*

BROMIDE OF ETHYL ANÆSTHESIA.

For nearly two years Dr. E. Haffter employed bromide of ethyl as an anæsthetic, and during that time he has administered it to more than 200 patients (*Correspondenz-Blatt für Schweizer Aerzte*, March, 1890). He believes it to be a safe and valuable anæsthetic for minor surgical operations. Merck's preparation is the best according to the author, and its purity can be determined by the fact that if poured upon the hand it should evaporate rapidly and without leaving any residue; that if shaken with water and filtered, the filtrate should be neutral, and give no reaction with nitrate of silver; and that the addition of concentrated sulphuric acid should not cause a brown color to appear.

The author concludes his paper with the following summary:

1. Bromide of ethyl acts with great rapidity, and usually without a period of excitement; it is perfectly safe when used in small amounts, and there are seldom any unpleasant after-effects.

2. The best method of administration is to pour the entire quantity to be used (1 to 5 drachms) on an impermeable mask, which is placed close to the patient's mouth and nose.

3. In most cases the operation can be begun in from fifteen to twenty seconds after the first inhalation, though the duration of anæsthesia will be very short, and only suitable for minor operations, opening abscesses, etc.

4. There are a few patients, chiefly alcoholics, who cannot be anæsthetized by the agent.

5. There are no contra-indications to the use of bromide of ethyl employed in small amounts and for short operations.

RAPID CURE OF ERYSIPELAS BY ERGOTINE.

Dr. Geo. C. Kingsbury (*Brit. Med. Jour.*) says: For erysipelas, like most other painful diseases, hosts of remedies have been suggested, and ever since Hueter discovered cocci in this particular ailment all sorts of germicide applications have been tried, with and without success. The most recent favorites are carbolic acid, ichthyol, and creolin. Without wishing in the slightest to underestimate the value of these agents, I would like to call attention to what has been my invariable treatment for at least five years. In every case I have used ergotine applied with a camel's hair brush to and around the affected area, and have found it a painless, rapid, and almost certain cure; in fact, I cannot recall a single case in which it has disappointed me. It is best used in the form of a 50 per cent. solution in distilled water, painted on frequently. Generally one or two applications suffice to diminish all feeling of tension, and it is rarely that the pain is not quite conquered in twenty-four hours, leaving the patient comparatively well. In many cases I have relied solely on the ergotine, not prescribing any internal medicine.

In writing this note I have no desire to be thought original, for I saw the treatment recommended in some medical paper of about the year 1884 or 1885, but I cannot lay my hands on it now, and fear the treatment has not had a fair trial, as I never hear of its being adopted. Neither do I pretend to explain the action of the ergotine, but the effective way in which it cuts off the excessive blood supply to an over vascular area naturally suggests its trial in other passive congestions, and in these also I have found it very useful.

In the *Year-Book of Treatment* for 1890, p. 255, I find it stated that Dr. F. Nesterovsky describes two cases in which he has used a mixture of "extractum secalis cornuti" and glycerine with success, the temperature becoming normal in six days. This encourages me to ask for a fresh trial of ergotine, which I have found in not fewer than thirty cases to practically cure in one day.

DOMESTIC CORRESPONDENCE.

The Importation of Foreign Natural Mineral Waters.

To the Editor:—At a meeting of the New York County Medical Association held May 19, 1890, the following resolution was adopted:

P. BRYNBERG PORTER, M.D.,
Recording Secretary.

Resolved, That the New York County Medical Association, a representative body composed of five hundred practicing physicians in the City of New York, believing that it is for the best interests of the people of the United States that all foreign natural mineral waters should be imported free of duty, respectfully urges upon the National Senate and House of Representatives that the provisions now in force relating to foreign natural mineral waters, and to the bottles in which they are imported, should be re-enacted in any tariff which is sanctioned by them.

What Killed the Woman?

To the Editor:—On May 30, I was summoned to the bedside of a woman reported to be in labor, arriving at 8 o'clock in the morning. She was 31 years old, and had had two children, the last one six years ago. Her former labors were described as energetic and soon over with. She was well developed, active and accustomed to labor. At 5 o'clock in the morning she was getting breakfast, and being suddenly seized with pain, went to bed. When I arrived, the lady attending her told me the patient was "wasting." I found her with a quick, feeble pulse, pale, agitated, body cool, and seemingly in the condition of a person suffering from hæmorrhage. On examination, the os was found closed tight, and it was with much difficulty that I introduced the tip of the index finger. The patient said her time was not up, and suspecting placenta prævia, I forced the finger through the cervical canal, and swept the inner circle, but found no placenta within reach. The os, instead of being thin, as usual near term—for she expected confinement within a month—was nearly an inch thick, freely movable, and easily drawn forward. While examining, I waited for uterine contractions, but though the patient complained of constant suffering located low across the bowels in front, and also at the summit of the uterus, yet the os indicated no contractions. A closer examination of the patient's clothing revealed the fact that what was supposed to be hæmorrhage was simply a discharge of the amniotic fluid, tinged with a reddish color sufficient to stain the bed and linen, but this had not been unusually profuse. Not a clot was to be found, and each examination revealed only a slight sanguineous discharge. Digital examination further revealed the head well down against the os pubis, with ample room in the sacral region, but there was not sufficient dilatation to make out the exact presentation. Nausea was present most of the time, but did not cause much vomiting. There was some thirst, but not of an urgent nature, certainly not as much as one would expect in a case of profuse hæmorrhage. The theory of hæmorrhage was therefore dismissed, and the case seemed one where a rupture of the membranes had occurred prematurely, followed by shock to the nervous system. The only thing to be done, apparently, was to await the natural development of uterine action.

At first I gave whisky freely to counteract depression, after which the pulse improved, the body grew warm and the general condition became better. In a few hours I gave ergot tentatively, but with no results. Constant misery continued, and nausea, feeble, quick pulse, restlessness, ringing of the ears, some dimness of vision, but no dilatation of the os, and no uterine action. Another symptom complained of was hardness of the prominent portion of the abdomen, but I attributed this simply to the escape of the waters. About noon—four hours after my arrival—I gave ¼ gr. of morphine. In an hour or two she became more quiet, slept some, and by 4 o'clock seemed much easier. Having complained of previous constipation, I gave magnesia sulph. and directed that it be repeated every hour until it acted. The patient being more comfortable, I then took my leave, directing them to summon me at once when labor became apparent. This was 4 o'clock P.M. She remained easy until 10. After midnight her condition became more urgent and I was again summoned. Arriving at 3, I found nearly the same condition as in the morning before—thready pulse, cold extremities, and great prostration, but still no uterine action and no dilatation. It was evident that something must be done, and that quickly. The nearest accessible doctor was eight miles away. However, a messenger was dispatched, and while I was deliberating whether I could possibly force my hand through an os which barely admitted the tips of two fingers, turn and deliver, the patient expressed a wish to get up. I advised her urgently to lie still, but being a woman of will, she insisted on getting out, and did so with the help of her husband, when she was immediately seized with syncope. Hastily they replaced her in bed, but consciousness did not return, and in five minutes she was dead.

Of course I was shocked, the bystanders were shocked, and the family were thrown into transports of grief. In a practice of nearly twenty years I had never witnessed anything approaching this before. Without convulsions, without visible hæmorrhage, without a single expulsive pain, without any special cause for alarm during a stay of eight hours throughout the day, with-

out the labor having actually begun, as it would seem, there being no alternations of pain, no distress in the back so usual in the first stage, but only a constant misery at the fundus and apex of the uterus, attended with a colored amniotic discharge and some pronounced symptoms of shock, this woman died almost before any one realized that she was in any danger. In the absence of a post-mortem the question of absorbing interest to my mind is—What killed the woman?

JAMES L. TAYLOR, M.D.,

Wheelersburg, O., June 14, 1890.

AMERICAN MEDICAL ASSOCIATION.

Forty-first Annual Meeting, held at Nashville, Tenn., May 20-24, 1890.

Section of Obstetrics and Gynecology.

FIRST DAY.

The first session was called to order in the rooms of the Y. M. C. A. at 3 P.M. by Dr. W. H. Wathen, of Louisville, Ky., who introduced the Chairman, Dr. William Warren Potter, of Buffalo, N. Y., who delivered the Annual Address (see page 785).

Dr. William H. Wathen then read a valuable paper upon the subject of *Intraligamentary Cysts*, which was duly received and referred for publication.

The next paper was submitted by Dr. H. O. Marcy, of Boston, on *The Surgical Treatment of Non-pedunculated Abdominal Tumors*. This and the preceding paper were jointly discussed by Drs. Ranney, Moss and Reed, and by the authors in conclusion.

The fourth paper presented was prepared by Dr. A. Vanderveer, of Albany, N. Y., and read by title, as follows: *She Supposed it Was Her Change of Life*.

Dr. Franklin H. Martin presented as the next paper, *A Plea for Early Vaginal Hysterectomy for Cancer of the Uterus*.

Dr. Charles A. L. Reed, of Cincinnati, followed with a paper entitled, *Primary and Ultimate Results of Vaginal Hysterectomy for Cancer*.

These papers were jointly discussed by Drs. Dunning, Groff, Reamy, Wathen, McIntyre, Moss and the authors.

The Section then adjourned.

SECOND DAY.

The second session of the Section was called to order on Wednesday, May 21, at 2 P. M., Chairman Potter presiding.

Dr. Ely Van der Warker, of Syracuse, N. Y., read a paper entitled, *Stricture of the Urethra in Women*.

The report of the Nominating Committee was next presented by Dr. Marcy as the result of election. Dr. Charles A. Reed, of Cincinnati, was made Chairman, and Dr. H. A. Kelly was elected Secretary for the ensuing year.

Dr. Van der Warker's paper was then discussed by Dr. Currier, of N. Y.; Dr. Englemann, of St. Louis; Reed, of Ohio, and the author.

Dr. Andrew F. Currier, of N. Y., then read a paper on *A New Operation for the Relief of Prolapse of Anterior Vaginal Wall*. Discussion followed by Drs. Van der Warker, Reamy, Johnston, of Danville, Ky.; Hoffman, of Philadelphia; Engleman, Kerr, Dunlap, and the author.

Dr. E. W. Mitchell, of Cincinnati, read *A Report of Two Cases of Hyperemesis Gravidarium*.

Chairman Potter read a telegram announcing the death of Dr. Wm. H. Byford, of Chicago.

On motion a committee, consisting of Dr. F. H. Martin, Dr. Reamy and Dr. J G. Meacham, was appointed to draft suitable resolutions in connection with the death of Dr. Byford.

Dr. Mitchell's paper was then discussed by Dr. Johnson, of S. C., and by Dr. Rosewater, of Omaha.

Dr. Aug. P. Clark submitted a paper upon *The Treatment of Placenta Prævia*, which was read by title.

Dr. L. H. Dunning, of Indianapolis, Ind., read a paper on *Uterus Bilocularis*, which was discussed by Dr. Currier and the author.

Dr. T. B. Greenley, of West Point, Ky., presented a paper upon *Asepsis vs. Antiseptics as a Prevention of Puerperal Septicæmia*, which was discussed by Drs. Currier, Hoffman, Shoemaker, add the author.

The next paper was submitted by Dr. John B. Meacham, of Racine, Wis., entitled, *The Great Utility of Bleeding in Puerperal Eclampsia*. The paper was discussed by Drs. Reed, Greenley, Hoffman, Kerr, Pomeroy and Davis.

THIRD DAY.

The third day's session was duly called to order by the Chairman, Dr. Potter.

Dr. Marie B. Werner, of Philadelphia, read a paper on *Fistulous Escape of Ligatures After Abdominal Operations*. This led to a full discussion, in which Dr. Wathen, of Louisville; Dr. Reamy, of Cincinnati; Currier, of N. Y.; Sell, of Penna.; Kelley, of Baltimore; Reed, of Ohio; Meyer, of Me.; Johnston, of Danville, Ky.; Price, of Philadelphia; Van der Warker and Hoffman, took part.

Dr. M. B. Ward, of Topeka, Kan., submitted a paper on *Diseases of the Female Pelvic Organs, and When to Operate*. This paper was read by title.

Dr. Hoffman next presented *A Plea for the General Adoption of Traction Forceps*. Discussed by Drs. Price, Currier, and the author.

Dr. Joseph Price, of Philadelphia, presented *A Retrospect of Pelvic Surgery*.

Dr. Geo. E. Shoemaker, of Philadelphia, read a paper on *Drainage in Abdominal Surgery*. The two papers were discussed jointly by Drs. Hoffman, Meyer, Reed, Hypes, Barnes and the author.

A paper prepared by Dr. I. S. Stone, entitled, *Psychical Results of Gynecological Operations*, was read by title.

Dr. Deahofe, of Potsdam, O., presented a paper, read by title, on *Puerperal Albuminuria*.

A short and pertinent farewell address was then delivered by the retiring Chairman, Dr. Potter, who, at its conclusion, introduced the Chairman-elect, Dr. C. A. Reed, of Cincinnati, and after a short address the final adjournment was had.

TREASURER'S REPORT.

DR. RICHARD J. DUNGLISON, Treasurer, in account with the American Medical Association, for Fiscal Year to May 22, 1890, inclusive.

DR. 1889.		
June 26. To cash balance, as per report at Newport meeting	$2,845.65	
June 28. To amount received from delegates and members at Newport meeting	2,705.00	
1890.		
May 16. Amount of annual dues from members to date	11,705.00	
May 20. To amount received at office of publication of Journal July 1st, 1889, to end of its fiscal year	11,563.37	
		$28,819.02
CR. 1889.		
June 29. By cash paid for postage, telegrams, expressage, stamped envelopes, etc	$ 69.85	
July 8. By cash paid Ward & Barnitz, printing bills	5.00	
July 8. By cash paid rental P. O. box	3.00	
July 8. By cash paid collectors' commissions on dues	38.50	
July 12. By cash paid Dr. W. B. Atkinson, permanent Secretary, expressage, telegrams, postage, etc., to date	116.90	
July 12. By cash paid Dr. R. J. Dunglison, Treasurer, expenses of travel, postage, expressage, etc	68.21	
July 15. By cash for stamped envelopes	70.40	
July 17. By cash paid Ward & Barnitz, envelopes, postals, notices, etc. (1888-9 account)	27.08	
July 26. By cash paid Wm. F. Fell & Co., printing stubbed receipt books, blanks and envelopes	12.50	
July 26. By cash paid Dr. H. R. Storer, Chairman Com. of Arrangements at Newport meeting, rental of halls, printing	1,093.24	
Aug. 26. By cash paid Wm. F. Fell & Co., postals and stamped envelopes for Permanent Secretary	19.50	
Oct. 1. By cash paid for rental of P. O. box	3.00	
Oct. 24. By cash paid for quarto circulars for Permanent Secretary	13.25	
Oct. 31. By cash paid Wm. F. Fell & Co., printing notices and circulars	5.25	
Oct. 31. By cash paid Wm. F. Fell & Co., printing letter circulars for Permanent Secretary	4.25	
Oct. 31. By cash paid Ward & Barnitz, postals and printing	5.25	
Oct. 31. By cash paid collectors' commissions, postals, stamped envelopes and postage	79.95	
Nov. 9. By cash paid Ward & Barnitz, postals and printing	5.00	
Nov. 21. By cash paid Ward & Barnitz, postals and printing	1.00	
Dec. 16. By collection charges Farmers' and Mechanics' National Bank	16.70	
1890.		
Jan. 2. By cash paid collectors' commissions, stamped envelopes, postals and postage	53.35	
Jan. 2. By cash paid Ward & Barnitz, printing notices	1.25	
Jan. 2. By cash paid for rental of P. O. box	3.00	
Jan. 30. By cash paid Ward & Barnitz, postals, envelopes, note sheets and printing	10.02	
Feb. 11. By cash paid Geo. S. Davis, subscription to "Index Medicus,"	10.00	
Feb. 11. By cash paid Ward & Barnitz, printing drafts	2.50	
Mar. 13. By cash paid Wm. F. Fell & Co., printing drafts and notices	4.50	
Mar. 14. By cash paid William F. Fell & Co., stamped envelopes and printing letter circulars	20.25	
April 1. By cash paid rental P. O. Box	3.00	
April 11. By cash paid Ward & Barnitz, printing slips, bills, etc	13.70	
May 14. By cash paid A. H. Coppuck, typewritten circular	1.50	
May 16. By cash paid for postage, telegrams, stamped envelopes, etc	63.81	
May 16. By cash paid Drexel & Co., collection charges on drafts	74.55	
May 16. By cash paid exchange on checks deposited at Farmers' and Mechanics' National Bank	45.15	
May 16. By cash paid Wm. F. Fell & Co., printing membership receipts	1.50	
May 22. By cash paid office of publication of the Journal to date	10,806.21	
May 22. By cash expended by office of publication of the Journal, June 15, 1889, to end of its fiscal year	11,343.70	
May 22. By cash balance	4,703.20	
		$28,819.02

FOREIGN DELEGATES.

J. B. Alford, Grand Rapids, O.; Winslow Anderson, San Francisco, Cal.; H. St. Clair Ash, Philadelphia; R. P. Andrews, Cambridge, Mass.; C. H. Alden, St. Paul, Minn.; W. H. Bell, Logansport, Ind.; R. B. Bontecou, Troy, N. Y.; H. T. Byford, Chicago, Ill.; L. D. Bulkley, New York; H. H. Beidler, Baltimore, Md.; D. R. Brower, Chicago; J. G. Berry, Chicago; E. Borck, St. Louis, Mo.; J. H. Baxter, U. S. Army; Leartus Connor, Detroit, Mich.; G. I. Cullen, Cincinnati, O.; J. J. Chisolm, Baltimore, Md.; S. A. Conklin, Canton, O.; E. W. Cushing, Boston, Mass.; A. P. Clarke, Cambridge, Mass.; I. DeZouche, Gloversville, N. Y.; W. M. Drake, Lamar, Tex.; W. H. Daly, Pittsburgh, Pa.; H. W. Dudley, Hillsboro, Tex.; R. F. Eads, Marshall, Tex.; J. Elsner, Denver, Col.; C. R. Earley, Ridgway, Pa.; E. F. Eldridge, New London, Wis.; V. A. Ellsworth, East Otto, N. Y.; W. Flynn, Marion, Ind.; S. W. Fowler, Delaware, O.; H. Fleischer, New Haven, Conn.; A. J. Fuller, Bath, Me.; T. M. Flandrau, Rome, N. Y.; C. H. Fisher, Providence, R. I.; T. A. Foster, Portland, Me.; E. Griswold, Sharon, Pa.; S. C. Gordon, Portland, Me.; N. Guhman, St. Louis, Mo.; A. L. Gihon, U. S. N.; E. C. Goodrich, Augusta, Ga.; E. Grissom, Raleigh, N. C.; G. L. Greenawalt, Ft. Wayne, Ind.; Hugh Hamilton, Harrisburg, Pa.; A. C. Holtzendorff, Plymouth, Ind.; M. L. Herr, Lancaster, Pa.; C. C. Hunt, Dixon, Ill.; Fairfax Irwin, Chelsea, Mass.; J. F. Jenkins, Tecumseh, Mich.; Reeves Jackson, Chicago; W. J. K. Kline, Greencastle, Pa.; T. C. Kennedy, Shelbyville, Ind.; A. Kaiser, Detroit, Mich.; W. F. Knox, McKeesport, Pa.; A. F. A. King, Washington, D. C.; C. B. Kibler, Corry, Pa.; G. H. Knight, Lakeville, Conn.; J. K. Lineaweaver, Columbia, Pa.; E. Lester, Seneca Falls, N. Y.; J. A. Larrabee, Louisville, Ky.; D. Laferte, Detroit, Mich.; A. M. Miller, Bird in Hand, Pa.; J. H. Musser, Philadelphia; E. S. McKee, Cincinnati, O.; W. H. Myers, Fort Wayne, Ind.; G. M. B. Maughs, St. Louis, Mo.; Liston H. Montgomery, Chicago; H. O. Marcy, Boston; L. Mackall, Washington, D. C.; G. C. Mosher, Kan-

sas City, Mo.; Robert Newman, New York; A. L. Norris, Cambridge, Mass.; G. D. Nutt, Williamsport, Pa.; J. E. Owens, Chicago; S. N. Nelson, Chicago; J. M. Pace, Dallas, Tex.; M. G. Parker, Lowell, Mass.; D. W. Prentiss, Washington, D. C.; P. P. Pomerene, Berlin, O.; E. von Quast, Kansas City, Mo.; J. H. Rauch, Springfield, Ill.; J. A. Ritchey, Oil City, Pa.; D. N. Rankin, Pittsburgh, Pa.; B. K. Rachford, Newport, Ky.; E. C. Sattler, Cincinnati, O.; N. Senn, Milwaukee, Wis.; Eugene Smith, Detroit, Mich.; R. Stephenson, Adrian, Mich.; H. Suter, Georgetown, D. C.; J. L. Stewart, Erie, Pa.; Carl Seiler, Philadelphia; W. C. Short, LaGrange, Ind.; Catherine B. Slater, Chicago; Theo. P. Simpson, Beaver Falls, Pa.; W. C. Simpson, Beaver Falls, Pa.; W. J. Scott, Cleveland, O.; J. V. Shoemaker, Philadelphia; J. M. Toner, Washington, D. C.; Max Thorner, Cincinnati, O.; E. S. Talbot, Chicago; J. D. Thomas, Pittsburgh, Pa.; F. C. Thayer, Waterville, Me.; J. E. Tefft, Springfield, Mo.; J. S. Tipton, Hillsville, Va.; A. Vogler, Newark, N. J.; T. F. Weaver, Collinsville, Ala.; R. H. Ward, Troy, N. Y.; T. L. White, McKeesport, Pa.; J. H. Yarnalls, Georgetown, D. C.; H. B. Young, Burlington, Ia.; F. E. Yoakum, Swedesport, La.; T. J. Young, Titusville, Pa.

INTERNATIONAL CONGRESS.

Tenth International Medical Congress, Berlin, 1890.

Section XIV—Diseases of the Teeth.

By the Committee of Organization the undersigned have been nominated American officers of the Section: Honorary Presidents—W. C. Barrett, M.D., D.D.S., Buffalo, N. Y.; J. Taft, M.D., D.D.S., Cincinnati, O.; Eugene S. Talbot, M.D., D.D.S., Chicago; H. J. McKellops, D.D.S., St. Louis. Honorary Secretary—R. R. Andrews, D.D.S., 432 Harvard St., Cambridge, Mass.

Two official papers will be read. One by Dr. Barrett, subject: "Crown and Bridge Work;" the other by Eugene S. Talbot, subject: "Irregularities of the Teeth."

Those who wish to offer any communication to the Section on Diseases of the Teeth, or who have anything of interest to present, should send a sufficient abstract of the paper, or a full description of the apparatus or device, to Prof. Dr. W. D. Miller, West Voss Strasse, No. 32, Berlin, Germany; or it may be sent to the Honorary Secretary, at Cambridge, Mass., for transmission to Berlin.

THERE were over sixty exhibitors at the Nashville meeting of the Association.

BOOK REVIEWS.

TENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS. By J. H. RAUCH, M.D., Secretary. Pp. xci, 313. Springfield, Illinois. 1890.

The admirable character of the work done by the Illinois State Board of Health is well illustrated in the contents of this report. The greater portion of the volume is occupied with the official register of physicians and midwives which is very complete. The physician's register gives the name, date of registration, school of practice, residence, age, nativity and basis of certificate in each instance. Illinois is the only State in the Union which exercises supervision over midwives, and the weeding-out process which has been so successfully applied to the medical profession has also accomplished considerable good in restraining unqualified women from the practice of midwifery. The proper control of midwives is one of the most important subjects that can occupy the attention of the State Boards of Health, and we hope that the other States will soon follow the lead of Illinois.

In the present report a number of interesting matters relating to interstate quarantine are referred to, particularly the action of the Board regarding an outbreak of cholera; these together with a paper by Dr. Rauch on the history of the Illinois Army Board of Medical Examiners, and abstracts of the Board's minutes add much of interest to the Report.

MISCELLANY.

THE MCLEAN COUNTY (ILL.) MEDICAL SOCIETY met on June 2d at the office of Drs. Mammen and Godfrey, Bloomington. A large number of the members was present. In the absence of both President and Vice-President Dr. Holderness, of Chenoa, occupied the chair. Dr. Taylor reported a case of orbital tumor with nasopharyngeal catarrh, and one of incontinence of urine with distended bladder; also a case of purpura and eczema together. Dr. Vandervoort reported a case of high specific gravity of urine in an apparently healthy man. Dr. Rhoda Galloway reported and presented a specimen of ovarian tumor and of fibroid polypus. Dr. Mammen read an essay on "Infant Feeding," and exhibited an apparatus for sterilizing milk. The meeting adjourned to meet the first Monday in September.

HEALTH IN MICHIGAN.—For the month of May, 1890, compared with the preceding month, the reports indicate that typho-malarial fever, cholera infantum, cholera morbus and whooping-cough increased, and that typhoid fever, membranous croup, puerperal fever and pneumonia decreased in prevalence.

Compared with the preceding month the temperature was higher, the absolute humidity was more, the relative humidity was slightly more, and the day and the night ozone were more.

Compared with the average for the month of May in

the four years 1886–1889, membranous croup and cerebro-spinal meningitis were more prevalent, and small-pox, typhoid fever, cholera morbus, cholera infantum, dysentery, intermittent fever and scarlet fever were less prevalent in May, 1890.

For the month of May, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was lower, the absolute humidity was less, the relative humidity was slightly more, the day ozone and the night ozone were considerably more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of May, 1890, at 62 places, scarlet fever at 49 places, typhoid fever at 24 places, and measles at 113 places.

Reports from all sources show diphtheria reported at 9 places more, scarlet fever at 5 places less, typhoid fever at 7 places more, and measles at 17 places more in the month of May, 1890, than in the preceding month.

TIGHT COLLARS AND VISION.—The influence of tight collars in impeding the circulation in the head by pressing on the jugular veins is well known to military surgeons with the troops in India; but the bad effects of such pressure in cooler climates has been demonstrated by the observations of Prof. Förster, of Breslau, who states that three hundred cases have come under his notice in which the eyesight has been affected by the disturbance of circulation caused by wearing collars that were too small. A large number of these cases were probably subjects of myopia.—*Medical Record.*

LETTERS RECEIVED.

Dr. W. W. Potter, Buffalo, N. Y.; F. A. Davis, Chicago; Battle & Co., St. Louis, Mo.; The Imperial Granum Co., New Haven, Conn.; F. G. Alger, Streator, Ill.; Dr. A. A. Warterfield, Union City, Tenn.; Dr. Albert E. Sullard, Franklin, N. Y.; Dr. J. G. McDougal, New Lexington, O.; The Sun, Williamsport, Pa.; Dr. Wm. H. Robb, Amsterdam, N. Y.; Dr. P. R. Hardee, Hampton, N. C.; Dr. G. V. Woolen, Indianapolis, Ind.; Ragsdale & Chassell, LeMars, Ia.; Dr. C. T. Chinn, Blue Grass, Ia.; Dr. H. R. Fox, Carrville, Tenn.; Dr. J. Stedman, Triumph, Ill.; Dr. G. D. Lain, Camp Colorado, Tex.; Dr. R. Callaghan, Kansas City, Mo.; Dr. B. C. Anderson, Beardstown, Ill.; Allen & Yates, Buffalo, N. Y.; Dr. A. A. Sevann, Mt. Sylvan, Tex.; Dr. O. Hasencamp, Toledo, O.; Dr. H. Alvis, Alma, Ark.; Dr. J. C. Blanton, Newmarket, Ala.; Dr. D. Street, Baltimore, Md.; E. Steiger & Co., New York; Dr. G. W. Shidler, York, Neb.; Dr. C. W. Simpson, Ferris, Tex.; Dr. S. Laughton, Bangor, Me.; University of Pennsylvania Press, Philadelphia; Rio Chemical Co., St. Louis, Mo.; Dr. R. Newman, A. A. Marks, New York; Dr. Thos. B. Evans, Baltimore; W. G. Farrar, Chicago; Dr. H. R. Storer, Newport, R. I.; Dr. A. F. Angell, S. Jacksonville, Fla.; Dr. H. L. Taylor, Asheville, N. C.; T. W. Hannaford, London, Eng.; Dr. K. Ruffin, Norfolk, Va.; Dr. D. J. McCaffrey, Blackstone, Mass.; Dr. S. T. Armstrong, New Orleans, La.; Dr. H. W. White, Boston, Mass.; H. H. Howe, Weston, Vt.; Dr. L. A. Roller, Detroit, Mich.; Dr. J. J. Bland, Houma, La.; Dr. R. Baily, Staten Island, N. Y.; Dr. T. H. Lane, Lincoln, Neb.; Wm. D. McGowan, Pittsburg, Pa ; The Medical Advance, Ann Arbor, Mich.; W. F. Ford, New York; Dr. R. M. Wyckoff, Dr. E. J. C. Minard, Brooklyn, N. Y.; Dr. C. F. Starkweather, Philadelphia; Thos. Leeming & Co., Geo. Tieman & Co., Dr. P. B. Porter, The Drevet Mfg. Co., New York; Dr. B. Brock, Olin, Ia.; F. B. Van Siclen, Tottenville, N. Y.; Dr. H. Durand, Paris, France; Dr. J. A. Scroggs, Keokuk, Ia.; Armour & Co., Chicago; Dr. N. Senn, Milwaukee, Wis.; Dr. B. A. Watson, Jersey City, N. J.; Dr. J. B. Hamilton, Dr. G. L. Magruder, Washington, D. C.; C. H. Christensen, Fremont, Neb.; The Victor Safe and Lock Co., Cincinnati, O.; Dr. J. H. Cuffman, Dalark, Ark.; Dr. J. H. Gheesling, Greensboro, Ga ; J. E. Ruebsam, Washington; Dr. H. B. Burkett, Hillsboro, Ala.; Dr. J. L. Taylor, Wheelersburg, O.; Dr. B. M. Ricketts, Cincinnati, O.; Dr. A. L. Hummel, Philadelphia; Dr. G. F. Cook, Oxford, O.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U.S. Army, from May 31, 1890, to June 6, 1890.

First Lieut. Charles Willcox, Asst. Surgeon, is granted leave of absence for ten days, with the approval of the Secretary of War. Par. 16, S. O. 126, A. G. O., Washington, May 29, 1890.

Major Peter J. A. Cleary, Surgeon, is granted leave of absence for six months, on surgeon's certificate of disability, by direction of the Secretary of War. Par, 4, S. O. 127, A. G. O., Washington, May 31, 1890.

Major Henry McElderry, Surgeon, is granted leave of absence for seven days, to take effect upon the final adjournment of the Army Medical Examining Board, by direction of the Acting Secretary of War. Par. 7, S. O. 127, A. G. O., Washington, May 31, 1890.

By direction of the Secretary of War, Capt. William D. Dietz, Asst. Surgeon, having completed at New York City the duties assigned him in S O. 29, Div. of the Pacific, April 30, 1890. will return to his station in that Division. Par. 5. S, O. 119, A. G, O., Washington, June 3, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending June 7, 1890.

P. A. Surgeon I. W. Kite, detached from Naval Hospital, Pensacola, and to hospital, New York.

P. A. Surgeon Thos. C. Craig, detached from Naval Hospital, New York, and to the U. S. S. "Vesuvius."

P. A. Surgeon Frank Anderson, granted leave of absence for the month of June.

Asst. Surgeon F. N. Ogden, ordered for examination preliminary to promotion.

Asst. Surgeon S. S. White, ordered for examination preliminary to promotion.

P. A. Surgeon Henry G. Beyer, ordered on duty on the U. S. S. "Yantic."

Surgeon Manly H. Simons, detached from Widow's Island Hospital and waiting orders.

Surgeon J. A. Hawke, ordered to Widow's Island Hospital and attending officers of Navy and Marine Corps at Portsmouth, N. H.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending May 31, 1890.

Surgeon George Purviance, detailed as chairman Board of Examiners. May 31, 1890.

Surgeon W. H. Long, granted leave of absence for three days. May 19, 1890.

Surgeon John Godfrey, detailed as member of Board of Examiners. May 31, 1890.

Surgeon Fairfax Irwin, detailed as recorder, Board of Examiners. May 31, 1890.

P. A. Surgeon H. R. Carter, ordered to examination for promotion. May 31, 1890.

P. A. Surgeon C. E. Banks, to proceed to Boston, Mass., on special duty. May 12, 1890.

P. A. Surgeon C. T. Peckham, granted leave of absence for eight days. May 14, 1890.

P. A. Surgeon R. P. M. Ames, to proceed to Memphis, Tenn., for temporary duty. May 14, 1890. To proceed to Gulf Quarantine Station for temporary duty. May 31, 1890.

Asst. Surgeon T. B. Perry, ordered to examination for promotion. May 31, 1890.

Asst. Surgeon A. W. Condict, granted leave of absence for twenty-two days. May 24, 1890.

THE

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PUBLISHED WEEKLY.

VOL. XIV. CHICAGO, JUNE 21, 1890. No. 25.

ORIGINAL ARTICLES.

EXTERNAL SURGERY OF THE NOSE.

ILLUSTRATED WITH PHOTOGRAPHS.

Read in the Section on Surgery, at the Forty-first Annual Meeting of the American Medical Association, May, 1890.

BY B. MERRILL RICKETTS, PH.B., M.D.,

PROFESSOR OF DERMATOLOGY AND SYPHILOGRAPHY CINCINNATI POLYCLINIC; CLINICAL LECTURER ON PLASTIC SURGERY IN THE MIAMI MEDICAL COLLEGE; VISITING PHYSICIAN FOR SKIN AND CANCEROUS DISEASES AND PLASTIC SURGERY TO GERMAN PROTESTANT AND CHRIST'S HOSPITALS, AND CONSULTING DERMATOLOGIST TO THE WOMAN'S HOSPITAL AND MEDICAL COLLEGE.

It would be the height of impropriety for me to attempt to bring the entire subject of external surgery of the nose before you for discussion within the time allotted me for that purpose. The mere mention of the various operations for the removal of necrosed bone, foreign bodies or the various kinds of tumors, from within the nasal cavity, would consume time and cause confusion, so that my remarks will be confined to the report of cases operated upon for the restoration of the nasal prominence obliterated by the causes hereinafter named.

I wish also to refer to the different methods of making this restoration.

There may be deformity, or partial or total destruction of either the hard or soft parts, or both, of this the most prominent facial feature. In the first instance, the alæ alone or with the septum may be absent; in the second, the integument may be wanting; while in the third, the integument, cartilaginous and osseous structures may all be gone.

The greatest difficulty is encountered when the alæ nasi or nasal bones are destroyed, especially the latter, as depression of the ridge is sure to follow; but if the triangular cartilaginous septum be present, this difficulty may be overcome, even though one-half of either one or both of the nasal bones be absent. Should the bony and cartilaginous septum together with the nasal bones be wanting, then, and not until then should the the transplanting or implanting of osseous tissue be resorted to. When the ala nasi alone or with the septum is absent, I consider that they may best be restored by tissue taken from the cheeks, also when the entire integument is wanting. However, it might be best in the case of women to substitute tissue taken from the arm or forehead. In the latter case the hair could be worn in such a way as to conceal any scar that might result.

With me it is a great question whether the integument of the forehead, with or without the external table of frontal bone, should ever be disturbed for this purpose, especially when the patient is a woman who is to be associated extensively with various people. If, as in the third class, the integument, cartilaginous and osseous tissues are gone, then further consideration would be necessary, such as transplanting or implanting osseous tissue, or utilizing a section from either one or both superior maxillæ.

All measures should be used, if necessary, to avoid occlusion of the nares, as a free nostril is one of the desirable results of the operation.

The causes of any amount of destruction are many, being classed as syphilitic, malignant, tubercular, traumatic, congenital, and I would add perverted tooth development. Whatever the cause or degree of destruction, all operative procedures should be postponed until necrotic changes cease to occur, all of which may be hastened by means of the curette, gouge or chisel. If the patient be a syphilitic, an operation should be preceded by a thorough course of mercury or the iodides; otherwise an operation may be made soon after removing diseased tissue, as in malignant disease, in which case it should be made immediate and radical.

Unlike many operations, each case requiring a rhinoplasty is peculiar to itself, and its favorable result is dependent upon the good judgment of the operator.

The per cent. of cases in which it is desirable to make rhinoplasties, is very small as compared with other operations. This, together with the comparatively few opportunities each operator has during his surgical career, makes it difficult for any one to establish rules, or be dogmatic in his assertions. However, there are quite a number of neglected cases throughout the country, and each man can contribute interesting personal experiences, that will in the aggregate tend to place the more radical operations upon a higher plane, especially now that so much is being done in

transplanting and implanting osseous and cartilaginous tissue. We may expect in this, as in many other branches of surgery, better results than have heretofore been secured.

Case 1.— Miss ——, colored, æt. 21, was referred to me during the spring of 1888 by Dr. B. K. Rachford, and was in a fair physical condition. She stated that a small sore appeared upon the tip of the nose a little to the right of the median line, about three years previous, which gradually increased in size until the entire upper lip and nasal alæ were covered with a phagedenic ulcer having somewhat the characteristics of an epithelioma, for which it had been treated by several physicians. Although there could be found no history of either hereditary or acquired syphilis, I gave her ¼ gr. of protiodide of mercury after each meal. At the end of twenty-five days the crusts were gone and the ulceration healed, after having destroyed the entire right ala nasi with a portion of the left, and one-half of the triangular cartilaginous septum. About this time I had an opportunity to examine the mother, whose face I found disfigured with syphilitic cicatrices which had existed, as she stated, for twenty-four years. Thus we have almost every evidence that the cause was hereditary syphilis. She continued to take iodide of potassium and mercury until the following December, when I operated in my private hospital (the Trinidad), by attaching a pedunculated graft from her right arm. Owing to displacement of the arms the stitches on one side were torn out, causing the operation to be but a partial success; however, the flap grew upon the side remaining sutured, so that at least two-thirds of the restoration was accomplished. During the next six weeks I was ready to complete my work, when she was seized with typhoid fever and sent home, where she died on the twenty-first day of the disease.

Case 5.—Mr. ——, æt. 24, robust and temperate, came under my care during the winter of 1888–89. There was complete depression of the soft parts, indicating the total destruction of the cartilaginous and bony septum, together with vomer, turbinated bones, hard palate and inner surface of superior maxillæ. There was a foul odor, and an examination revealed the presence of diseased bone, but the two nasal bones were intact. At the age of 14 years his nose was perfect in shape, but at 17 he noticed a slight offensive discharge which gradually became more profuse and obnoxious. There was soon a slight depression in the centre of the nasal ridge, which also grew deeper, so that at the age of 20 there was general depression, and it has become greater and greater ever since. On two different occasions I removed necrosed bone, the last time (May, 1889) making it complete. The total destruction of the bones led me seriously to consider the propriety of implanting or transplanting osseous tissue. However, I decided to give him the benefit of that much cherished doubt, by first taking a flap from each cheek, knowing that bone grafting could more easily be accomplished after this had been done.

The substitution of the breast bone of a fowl, the femur or humerus of the rat, guinea-pig, squirrel or rabbit, for the outer table of the frontal bone, the elevation of a piece of each superior maxillary bone so as to form a rafter, as in the gable of a house, all were before me, each presenting its advantages and disadvantages. Then too, the operation which consists in taking integument from the forehead was considered, also that of utilizing tissue from the arm, but I felt assured that my first impression was best, namely: to take the tissue from the cheeks. This I did, after keeping him upon mercury and the iodides for several months.

The history was vague, there being no indication of either hereditary or acquired disease. Not until eight months after did I see his mother, who consulted me with reference to a sore upon the leg, of fourteen years' duration. I suspected it of being of specific origin and gave her $\frac{1}{8}$ gr. of bichloride of mercury, together with 15 grs. of iodide of potassium after each meal. This seemed to be the keynote to the problem, as the ulcer immediately began to improve and finally disappeared. I was soon satisfied that the young man's source of infection was through the mother.

Case 7.—Mr. K., æt. 69, in a good physical condition, sent to me by Dr. B. P. Goode, July 6, 1889. There was a papillomatous growth about the size of a wren's-egg situated upon the under surface of the point of the nose, a little to the right of the median line, which appeared about six weeks previous to his visit to me. Its development was gradual, with elongated and hypertrophied papillæ that were easily separated; when this was done, however, a slight capillary hæmorrhage would occur. The lower half of the nose was hypertrophied, softened, and covered with numerous broad and deep sebaceous follicles, which condition aided materially the rapid and destructive development of an epithelioma, such as the microscope proved the growth to be.

I advised amputation, and replacement of tip and entire nasal integument, which was done on August 4, 1889, at the German Protestant Hospital. I made an incision on each side including the alæ, afterward dividing the cartilaginous septum, I dissected up the skin to a line parallel with the eyes. A flap 1½ inch wide was taken from each cheek, with pedicle at inner canthus, and brought to the median line, united with silk and allowed to rest upon the remaining septum. The nose was, however, shortened about $\frac{3}{16}$ of an inch, as is shown in the photograph. This was due to the patient being a male, and having a great amount of hair upon the upper lip, it

would have been necessary to extend the incision farther down the cheeks to cover the full length of the septum, and in such an event the nose would have been covered with a part of his moustache—an event not to be expected in the case of women. Thus it is seldom that the conditions are the same with men as with women.

There is no cicatrix to be seen, nor drawing of the eyelids or lips, while the labio-buccal fold conceals the line of incision, so that it would be difficult to determine by careful examination the source from which the flaps were taken. It is now ten months since the operation, and no indication of a return of the disease. He has nasal respiration and suffers no discomfort except slight tenderness at times over the ridge. His facial appearance is by far better now than before either the operation or appearance of the disease.

Case 9.—Mrs. ——, æt. 70, fair health, has suffered with lupus vulgaris of right ala nasi for eight years. The entire cartilaginous margin was destroyed, and the disease gradually encroached upon the surrounding structures. She was operated upon in the German Protestant Hospital by removing the integument of the diseased side and replacing with a flap taken from the corresponding cheek, its pedicle being attached from above, as there would be less deformity from cicatricial tissue than when attached from below. Then too, there were no hairs upon the cheek and upper lip to contend with, as would have been the case in a man. There is quite an ugly scar upon the cheek when the pedicle is attached from below, while that from above leaves the line of incision concealed within the labio-buccal fold. She made a rapid and favorable recovery with a niche to be seen, showing that the flap was rather short. I discovered this error immediately after the flap was taken, but decided to take my chances in securing union, which did not take place throughout. At her age she does not care to have the slight defect remedied.

Case 11.—Miss ——, æt. 22, of excellent physique, was referred to my clinic at Miami Medical College by Dr. L. Colter, April 8, 1890. That portion of the nasal ridge corresponding to the cartilaginous septum was destroyed, and the tip of the nose was thrown back so that it pointed upward and outward at an angle of 45° to a horizontal plane of the face. Further examination revealed the absence of the bony septum, vomer and turbinated bones, the inner or nasal side of superior maxillæ remaining. There was a discharge, mild in its offensiveness, which had made its appearance at the age of 16 years, the first indication that disease was present. This gradually became more profuse and offensive, until all the nasal structures were destroyed. The two nasal bones, however, remained intact. There were no indications of syphilis, either from my own examination or her own statement, so that the cause of the necrosis was indeed obscure. Reflected light revealed the presence of a hard white body which was supposed, as I was informed, to be bone.

I determined to operate at once and restore the nasal body, with a flap taken from each cheek I sent her to Christ's Hospital and operated April 16, 1890. I began by transfixing the alæ at the point of greatest depression, which divided the parts equally in a perpendicular line, and finished my incision by cutting upward. This done, I drew down the lower portion and explored the nasal cavity with my index finger. I found no diseased bone present, but my finger came in contact with some foreign body evidently not bone, yet I was uncertain as to what it was. It lay along the floor of the palatal process of the superior maxillæ and extended backward and to the left, and was so firmly imbedded that it was exceedingly difficult to remove it, which I did with the bone curette, not having forceps with which I could grasp it firmly enough to dislodge it.

Having done this much, the cavity was perfectly smooth and free from any obstacle that would suggest further interference, so from each cheek I cut a flap 1¼ inch, leaving a pedicle ⅜ inch wide at naso-frontal margin. The inner borders were brought to the median line and there sutured with fine catgut, the lower portion having previously been drawn down so that the point of the nose was in about its normal position; the flaps now filled the space thus formed by this manœuvre, and the remaining free margins were sutured to the lower section of the nose. Due allowance was made in cutting the flaps for the contraction of the tissue, so that at first there seemed to be a redundancy of tissue. The edges of the wounds made in the cheeks were now brought together and healed very nicely by first intention; only a small spot was left to granulate on either side.

This case presents the most novel features of all I have had or heard of, in that the presence of the tooth is most likely the cause of necrotic changes. She has all of her upper teeth with the exception of the left canine, in a most excellent state of preservation. The germ tooth being present did not fail to assert its right to development (one of the strongest instincts of Nature), and in doing so, encroached upon already occupied territory. Dentine being harder and of greater vitality than bone gained the victory, leaving its dead within the nasal cavity to be removed as Nature saw best, which was by the usual process—decay.

Had I a parallel case, I should utilize a section from each superior maxillary bone in connection with what has been done in this case; not that I would expect a better primary result, but that I would be better able to judge the efficacy of such an operation.

CONCLUSION.

In conclusion I would say that from general and personal observation, I am fully aware of our shortcomings in the treatment of malignant diseases of the nose.

In many cases amputation of diseased tissue, extirpation of diseased bones entire, or excision of merely the necrosed bone should be made, and the soft parts replaced by one of the foregoing methods, and this should be done, too, at the earliest possible date. This restoration of the soft parts by flaps taken from the cheek or cheeks, is the method to receive *first* consideration. The method of taking the flap from the arm should be *secondly* considered, and from the forehead *thirdly* considered. This is the order of value of the three methods.

Silk is the only material to be used in suturing the soft parts, and silver wire for suturing the bony parts.

When bony restoration is to be made, the sections should be taken from the nasal border of each superior maxillary bone in preference to being taken from the frontal bone, from the hand, or from the lower animals. It is from this method that the greatest successes of the future are to come.

No case of partial or total absence of the nasal prominence should be allowed to go uncared for, and exploratory incisions should be made in all cases of obscure conditions of the nasal cavity, due to whatever cause, for by resorting to the various lines adopted for incisions, to turn the nose aside, no deformity or serious consequences follow.

The operations of Rouge, Olliver, Maisonneuve, Dieffenbach, Cheever, Langenbeck, Péan, and Bruns, are all familiar to you, gentlemen, and will serve as guides to decide many obscure and difficult problems for you.

Upon examination of the oral cavity, in any necrosis of the nasal bones with pain, care should be taken to discover whether any tooth has failed to appear; if so, be on your guard, for if that tooth has taken an upward growth, it may rarely be the cause of nasal deformity.

Lastly, I would most earnestly invite more general experimentation with the various kinds of grafting, from tissue of some of the lower animals.

PHYSIOLOGY AT VIENNA.—After the retirement of Prof. Ernst von Brücke from the chair of physiology in the University at Vienna, which will take place at the end of the present scholastic year, there will be two professorships provided for this branch of instruction. According to the *British Medical Journal*, this new departure has been rendered necessary by the fact that the classes have become too large to be satisfactorily managed by one professor.—*Med. News.*

SOME PROMINENT FEATURES COMMON TO DRUNKENNESS AND GENERAL PARALYSIS OF THE INSANE.

Read in the Section of Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, Nashville, May, 1890.

BY T. L. WRIGHT, M.D.,

OF BELLEFONTAINE, O.

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Alienists long ago pointed out the remarkable similarity that exists between certain prominent features of drunkenness and those of paresis. And this resemblance between the appearances and symptoms of the two affections is not surprising when it is remembered that a certain grade of *universal paralysis* is an essential condition in both of them.

While it is true that there is a striking sameness in the superficial features of paresis and drunkenness, there are, nevertheless, certain facts which impress an individuality upon each, and which may serve, upon occasion, to distinguish one from the other.

For instance, in drunkenness there are particular chemical affinities belonging to alcohol, which tend to produce physical changes in the structure, that are unknown in paresis. Such changes are perceived in the appearance of the blood globules, and in the disturbance of their functions when they are influenced by the presence of alcohol in the circulation. The distinctive features of drunkenness are made prominent, also, through the gradual accumulation of secondary poisons in the system. These poisons are brought into the circulation through the chemical influence which alcohol exerts upon the general structure. Chief among these deleterious substances, may be mentioned carbonic acid and urea.

There are also other important modifications in physical structure arising from prolonged alcoholic influence, which differ from the progressive structural changes observed in paresis. The final result is that the chronic inebriate, and chronic paretic, appear much more diverse in character than the same persons do when the diseases are recent; for in their earlier history they are guided and dominated by a general paralytic condition almost exclusively.

The more obvious and striking symptoms, therefore, that are common to active intoxication and paresis, are those growing out of the presence of general paralysis in both affections.

Authors tell us that in paresis, the paralytic disability, while implicating the motor powers—such as locomotion, articulation, and the facial expression—extends at the same time to the nervous organism that is employed in expressing rationality and intelligence; and also to that other

portion of the same system that is associated with the exposition of the moral nature: "The concurrence and concurrent increase of mental and motor disorder" (in paresis) "are not accidental, but constant. The patient loses the power of performing both ideas and movements, and gets worse and worse generally in both respects. Paretic symptoms present a remarkable group, in which mental impairment and motor paralysis proceed together with pretty equal steps."[1] Another writer[2] says of paresis, that it is "simply a deterioration of a man's whole nervous organization. The proper name for the disease is not *paresis*, but *general paralysis*."

Thus it appears that in paresis, the motor and the intellectual and moral impairments are all present at the same time, and proceed together in a community of incoherent symptoms and movements.

In this respect the phenomena of paresis are like the changes progressing in acute drunkenness; for the paralysis of active intoxication involves the entire nervous organization. Alcohol is carried everywhere by the circulation, and it necessarily impresses all the nerve centres. Hence in drunkenness, the motor and the intellectual and moral centres are, at one and the same time, in a disabled and partially paralyzed state.

1. In drunkenness, the functions of the motor system are greatly hampered and deranged. While there is insufficiency in muscular *force*, there is also serious disorder in the powers of muscular *coördination*. Movements are not only weak, but they are out of harmony with each other. The walk is staggering, the articulation imperfect, and the expression of the countenance unnatural and fatuous.

In general paralysis of the insane there is, likewise, weakness and incoherence in the muscular movements. "This disorder is marked by general and progressive loss of coördinating power over the muscles, especially those of speech and locomotion."[3] It is declared that "precise coördination of movement, such as is necessary for writing, sewing, playing upon a musical instrument, and like acquired automatic acts, is much impaired, or quite lost."[4]

This is also an excellent description of the disabilities which beset a person who is in a state of intoxication. When there is doubt whether or not a person is under the influence of alcoholic liquor, the question may ordinarily be solved, when the *gait* of the person is carefully noted. Even in slight intoxication the feet seem to be weighted. They are not raised the usual height from the ground. Every few steps there will be shown a slipping, or scraping of the boot upon the pavement.

[1] Maudsley, "Path. of Mind," pp. 433-443.
[2] D. F. Kellogg, New York Sun.
[3] D. Hack Tuke, "Psychological Medicine," p. 322
[4] Maudsley, Pathology of Mind," p. 437.

In paresis, the gait is similarly modified. "It is feeble and shuffling, and the person affected easily stumbles at a step, or on uneven ground."[5] There are many other fine and almost imperceptible points in motor activity wherein drunkenness and paresis closely resemble each other.

2. The similarity of many of the mental features of paresis to those of drunkenness, is indeed surprising. The feeling of *egoism* in paresis is generally exaggerated to the highest pitch. It is one of the most constant symptoms, as well as one of the most striking, of that malady. "A patient believed he had intercourse with the Almighty and the Holy Ghost; that he had £40,000 in the London and Westminster Bank; that he was King of England,"[6] etc. Describing this mental condition of the paretic, a writer says: "He brags continually of his grand wealth; . . his boastfulness turns to evident delusions. He is the best rider, or jumper, or card player, or fencer, or fighter, in the world."[7]

An almost perfect counterpart of all this is seen in the exaggerated feelings and unbounded self-exaltation of drunkenness. "The exhilaration stage, or preliminary effect of alcohol, is a state of pleasurable elation, of pleasant and grandiose ideas, of mental excitement and rapid ideation—such an exaltation and mental activity as we often witness before a maniacal outbreak, or an attack of general paresis."[8]

Two young men, very drunk, were passing a private dwelling. One of them was completely overcome near the entrance of the house. The other with much difficulty managed to come in. He inquired whether his friend might be brought in and cared for, at the same time remarking that the business could be easily effected, as he was, himself, a man of "herculean strength." Permission was given, and the young man proceeded to carry his friend into the shelter that was proffered. He had great apparent difficulty in raising a single leg of the fallen man; and finally, giving a pull, his hands slipped off, and he staggered sidelong and backward until he measured his length upon the ground, where he remained perfectly helpless until both himself and comrade were taken away by friends. The point is, that this man, although totally disabled, was honestly of the opinion, when he went out of the house, that he could pick up and carry his fallen companion like a child in his arms.

A paretic is mentioned "who could scarcely stand, or lift his hand to his head, yet he asserted that he could write his name on the ceiling with a 500 pound weight hung on his little finger."[9]

But there is another phase of egoism, or *self-assertion*, which has very much the same appearance both in paresis and drunkenness. Perhaps

[5] Maudsley, Pathology of Mind, pp. 436-437.
[6] D. Hack Tuke. [7] Kellogg.
[8] Norman Kerr, Inebriety, p. 18.

it is rather a condition of the disposition or of morals, than of the mental powers proper. However that may be, the individual, with slight cause, or no cause at all, "will in a blind fury attack all around, exerting his muscular powers to their utmost, regardless of all consequences." Of course such displays can take place only in the early stages, either of drunkenness or paresis, before the muscular system becomes very greatly paralyzed. "These are the patients" (paretics) "whose ribs are broken by attendants in efforts to overpower them, and who, in various ways, cause so much confusion in asylum wards."[10]

Everybody can easily recall very similar exhibitions of mind and conduct in the drunkard. The maniacal fury of the alcoholic state has "many a time and oft" wrought the destruction not only of property, but of life itself. The following example of drunken mania is furnished to the writer by Dr. Chenery. It was not given with a view to illustrate any point in particular, but simply as a characteristic fact; "I was called in the night to see a dry-goods clerk who was smashing things generally. He was pretty drunk, but later a frenzy seized him. His eyes were staring very wild. His most pronounced impulse was to rush head foremost out of the window, sash and all. He wanted to kill himself, and asked for a pistol to shoot himself with. He was taken to the police station, and when he came to his natural state he could not understand his case at all." These alcoholic window smashers and general destructives are known to everybody; for amongst the immense number of intoxicated individuals, they of course appear quite frequently. In paresis, however, in consequence of that disease being infrequent, they do not come into view so often.

3. Not only are there motor and mental paralyses and incoördination in both paresis and intoxication, but there are also conspicuous degenerations and decay of the moral attributes. The paretic will often take possession of things that belong to others, and claim them as his own; and that, too, in a manner not particularly stealthy or surreptitious. He acts as though he had a certain authority or right with respect to them. Indeed, some unexpected act of dishonesty or indecency, is frequently the first notification of approaching paresis.

It is well known that theft is also a common accompaniment of drunkenness. This is sometimes explained upon the hypothesis that alcohol simply exposes a man's real nature; and indeed it is thought by some inconsiderate people, that if a man is wicked enough to drink, he is wicked enough to steal. This is an easy way to solve a very knotty problem; and to persons who are more conceited than wise, it appears to be eminently satisfactory. It is, however, absurd to suppose that a man who exposes himself to the penalty of theft, will, if truly in his right mind, steal such things as are of no value to him, or steal in such a way as will assuredly result in his detection. For example: an old soldier, once wounded in the head, always stole when drunk; but he confined his thefts wholly to bibles; and he was transported for his persistence in bible stealing. Another man (being drunk) stole spades only; another was punished for his seventh theft of a tub,[11] etc. There is something more here than the simple dishonest impulse to steal for gain. It is certain that a distinction should be made between the criminal who, from force of habit and inclination, pursues his unlawful avocation impartially, drunk or sober, and the man who is never guilty of dishonest practices unless he is under the influence of liquor.

A young man, drinking alcohol, stole a horse. He tried openly to sell the animal to people not far from the scene of the theft. He finally sold the horse, and was arrested in the act of entering the cars with the evident intention of returning to his home, and to the neighborhood of the owner of the horse. But the fact was, that he mounted the horse in the presence of its owner (who was an acquaintance), and who made no effort to restrain him. To those he met on the road he told correctly his name and where he lived. He was acquitted upon trial, upon the ground that his drunkenness was such as to incapacitate him from forming a rational intent. He claimed that he had no recollection of the main facts of his life on the day of the theft.

But in a few months the young man got drunk again and stole another horse. The animal was found, tied in an unfrequented place. The circumstances of this theft were of a character as absurd and aimless, as they were in the former transaction, above described.

Here was a dilemma indeed. It was reported that the neighbors were "hot" about the affair, and loudly declared that it was only necessary to "get drunk" if one wanted to steal a horse and escape punishment. The attorney advised his client to plead guilty in the second offense. This was done, and the young man is now suffering the penalty of crime.

The probability is, that when this person obtains his liberty he will, if he gets drunk, simply steal another horse and sell it, or give it away, or hide it in some sequestered place, and when sober again will have no recollection whatever of the affair. This man is not quite of age. He has a long narrow head, intelligence below the average, light complexion and pleasant countenance — which excites the sympathy of any one in communion with him. He says he has no remembrance of what takes place while drunk.

[9] Blandford.
[10] Blandford, "Insanity and its Treatment," p. 278.
[11] Dr. A. Peddie, testimony before committee of House of Commons in 1872.

4. Another point of resemblance which is frequently observed in the paretic and the drunken man, is defective ideas respecting the nature of decency and of common prudence. "The paretic does things which even a patient afflicted with what is termed moral insanity would not do; expose his person—often apparently half unconscious of what he is about; commit assaults in a foolish manner upon women, without regard to opportunity, place or consequences." [12]

A better description of the unseemly conduct quite common with persons who are in an advanced stage of intoxication, could not be formulated. Everybody must recognize the picture as a true delineation of certain characteristic features of drunkenness.

5. In the *treatment* of drunkenness, as in that of insanity, kindness is much more effective than force and punishment. It is an established opinion among alienists, that gentleness is stronger to restrain and recover the insane, whenever its application is possible, than violence. In drunkenness also, either when the fit is on, or is off, gentleness is the sheet-anchor in treatment. The incarcerations, the fines, the insults and the admitted design to make drunkenness "infamous," have failed signally as missionary efforts. A kind look, a friendly word, will do more towards staying the drunkard in his downward course than a thousand punitive applications.[13] The raw, and chafed, and quivering nerve of the neurotic temperament, which so often impels the inebriate to seek the quieting effects of alcohol to assuage his agony, illy brooks the application of the rough and pitiless hands of hate and contumely. Both in insanity and in drunkenness, insolence of language, and indignities offered to the person, fasten the malady stronger upon the patient; for there is in both of these classes, a deep and abiding feeling that they are somehow or other *wronged* when they are cruelly and contemptuously treated.

Crimes committed by paretics who have advanced so far as to exhibit symptoms, either of grandeur or of destructiveness, would be held as without guilty intent. But an intoxicated person exhibiting practically the same symptoms, arising practically from the same cause (a general but indefinite paralysis of the entire organism) would be acquitted of criminal acts only with the greatest difficulty. Usually the drunken man would be convicted, and that too with much gratuitous insolence and contempt. That the one disease is persistent, and indeed incurable, while the other is of brief duration, should not, surely, make this wide distinction in criminal responsibility. While drunkenness is actually present in a stage of considerable advancement, it would certainly appear that the mental disability is very similar to that in a corresponding stage of paresis.

In both conditions—drunkenness and general paralysis of the insane—there is the same general nerve incompetency extending throughout the whole organism. It affects at once, and in common, the motor, and mental, and moral capacities.

"The better rule of law," says Mr. Clark Bell, the distinguished President of the New York Medico-Legal Society, "now undoubtedly is that, if a person at the moment of the commission of the act was unconscious, and incapable of reflection or memory from intoxication, he could not be convicted. There must be motive and intention, to constitute crime; and in such a case, the accused would be incapable, from intoxication, of acting from motive." [14]

[12] Blandford, "Insanity and its Treatment," p. 272.

[13] This applies, of course, only to persons who are drunkards from hereditary predisposition (dipsomaniacs), or from physical injuries received, or from morbid degeneration of physical structure—to those, in fact, in whom inebriety is strictly a disease.

[14] "Medical Jurisprudence of Inebriety" p. [illegible], and authorities there cited.

THE THERAPEUTIC VALUE OF ANTIPYRIN IN SOME DISEASES OF CHILDREN.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn. May 20, 1890.

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The daily experience of the medical practitioner demonstrates the truth that no class of remedies of recent introduction has proved of so much value and interest to him as that of which antipyrin is the type. Especially is this statement applicable to the diseases of infancy and childhood.

Originally introduced, as its name implies, as an antipyretic, antipyrin has in practice developed equal if not more important properties as a neurotic remedy. How this latter action is accomplished or upon what theory the *modus operandi* is explained has not yet been determined. Empirical observations have, nevertheless, established the fact that antipyrin and its congeners are amongst the most valuable and reliable nerve sedatives that we now have at our disposal.

In considering the therapeutic value of antipyrin in the diseases of children, it is not my intention to discuss the entire field to which its virtues may be applicable, but to present to the attention of the medical profession only certain diseases in which my experience has shown decided results favorable to this remedy. In this I am pleased to find my observations confirmed in numerous instances by many others.

The only disease affecting children in which I employ antipyrin as an antipyretic is pneumonia, either the croupous or the catarrhal form. And even here I seldom resort to it unless the tem-

perature runs above 104° F., near the onset of the attack, inducing symptoms of nervous irritation, indicating a tendency to convulsive seizures.

The high temperature of pneumonia, whether in adults or children, is generally regarded as a dangerous element of the disease, on account of its supposed tendency to cause heart failure from granular degeneration of the cardiac muscular fibre. This view may be correct as applied to a continued fever, as typhoid for example, but heart failure in pneumonia is more rationally explained, in my opinion, by the continued strain produced from overcrowding and sudden dilation of the right heart, the result of engorgement of the pulmonary circulation, when the area of lung involved in the inflammatory process is extensive. This condition is best relieved by other means than antipyretics. The chief danger of high temperature in the pneumonia of children, in my estimation, is the production of an attack of convulsions, due to cerebral congestion; this latter condition being due to the poorly oxygenated state of the blood, thereby offering a highly susceptible condition for the convulsive seizure, through the effect of the fever.

It must not be overlooked that pneumonia is a self-limited disease, unless of the disseminated catarrhal form in children, and the less active interference with its natural course is employed the better will be the results. Antipyrin, besides its antipyretic action, will allay nervous disturbance when not given too freely, and this point is of prime importance. I administer 2½ to 5 grains, dissolved in water or suspended in syrup, repeated every hour for 4 doses, once in the 24 hours. I prefer if possible to give it towards evening, so as to secure sleep, which commonly follows as a result of its sedative action. Occasionally it may occur that the little patient is asleep before the time for the third or fourth dose has arrived. In such a case the entire dose is not given as the sleep is ordered to be undisturbed.

I have never seen any but the very best results follow its administration in the pneumonias of children when used in the manner I have mentioned.

But my most marked success with antipyrin has been in the treatment of chorea. About one year ago my attention was directed to its employment in this disease, on learning of its use by Dr. Horatio C. Wood, in his clinic at the University of Pennsylvania Hospital. Chapin, in the article on chorea, in the "International Medical Annual" for 1889, reports a case presented at the above named clinic, in which one week's treatment by antipyrin produced quiet after the case had just previously been for three weeks under the arsenic treatment without benefit. My own experience in the treatment of one case of chorea in my clinic at the Out-door Department of Mount Sinai Hospital is fully corroborative of Dr. Wood's case. A girl 12 years of age who had chorea with rheumatic symptoms was treated for two months with arsenic and bromide of potassium; the arsenic being gradually increased in dose until she was taking 7½ drops of Fowler's solution with 15 grains of bromide of potassium three times daily. A part of this time iron and digitalis was also administered for a cardiac complication. The choreic movements, which were of the minor form, not improving, antipyrin in 10-grain doses, repeated three times daily, was given, and in four weeks all choreic movements had ceased.

This treatment for chorea has been used by me thus far in seven cases, two being still under treatment with improvement. Of these seven cases, one was cured in one week, two in three weeks, the one above related in four weeks, and one, the severest of all, in six weeks. The last was the case of a girl 9 years of age, caused by chagrin at not receiving promotion in school, and was first seen on the fourth day of the attack, when the excursions were extensive and severe. Antipyrin, in doses of 7½ grains, four times daily, was ordered. At the end of the first week of treatment the movements were much quieter, although, in the meantime they had been more severe than when first seen. About the tenth day of treatment an extensive urticarious eruption, of a coppery color, unattended with itching, appeared over the face and body, and in consequence the number of doses was reduced to three daily. In two weeks the eruption had entirely disappeared. Complete cure was effected in six weeks. No other ill effects from the antipyrin than the eruption were manifested.

When we reflect that according to the report of the Collective Investigation Committee of the British Medical Association on chorea, which report was prepared by Dr. Stephen McKenzie (*British Med. Jour.*, *1887*) and is based upon the returns of 439 cases, the results of drug treatment, the favorite remedies being arsenic and iron, showed an average duration for the disease of ten weeks, the same duration being shown with non-drug treatment (that is hygienic and dietetic measures only), I think we are warranted in granting a foremost place to antipyrin in the management of chorea. The average duration for the disease in my own cases was only four days.

Nineteen cases of chorea, two of which were very severe, have been treated with antipyrin by Dr. Jean Bonisson, of Lyon, France (*Lyon Médicale*, Feb. 9, 1890). Eleven of these were completely cured and six greatly improved. The duration of the disease is not mentioned.

The close relationship of chorea to articular rheumatism in a large proportion of cases, as shown by the observations of Sturgis (*Archiv*

Pediat., 1887) based upon an analysis of 177 cases, may to a certain extent explain the *rationale* of the beneficial action of antipyrin in chorea. Sturgis concludes that chorea is only another manifestation of the same morbid condition as articular rheumatism, especially relating to the period of childhood. Other careful observers regard the rheumatic disposition as influencing fully one-third the cases of chorea, a smaller percentage being known as fright chorea, due to emotional disturbances.

We must certainly be acquainted with the fact that antipyrin has already secured firm recognition as a reliable remedy in the treatment of articular rheumatism, and it is most probable that its beneficial action in this disease may be explained on the principle of its antiseptic influence; the poison of articular rheumatism being undoubtedly the product of a fermentation in the stomach depending upon some specific germ.

It would certainly seem that the antiseptic action of antipyrin is the correct explanation of its favorable effect in pertussis, and it may be interesting to note that it was with this view of the pathological origin of the disease, which was subsequently successfully demonstrated by Affanasieff, that it was originally introduced as a remedy by Sonnenberger.

For the past two years I have depended entirely upon antipyrin as a remedy in pertussis, and so far have seen no reason to change my practice. I have treated forty-five cases of pertussis, two being complicated with a severe degree of catarrhal pneumonia, with antipyrin, and all have recovered in a shorter period of time, or the attacks lessened in number and severity than previous cases under any former plan of treatment.

Ordinarily, my plan, in a simple case of pertussis, is to administer from $3^1/_2$ to $7^1/_2$ grains of antipyrin in syrup of wild cherry and water, three times daily, according to age. Where pneumonia became a complication the method of administration was changed to that before mentioned in the early part of this paper.

Many practitioners have no doubt met with cases of urticaria that have resisted the time-honored treatment rhubarb and soda mixture, either alone or combined with bromide of potassium or many other remedies. To such I can confidently recommend the use of antipyrin, given either alone or in the rhubarb and soda mixture, or, what is pleasanter, the compound syrup of sarsaparilla. Let it be distinctly understood that I do not refer to ordinary acute attacks of urticaria that will disappear under restricted diet alone, but to persistent cases that will continue in an intermittent manner for months, in spite of arsenic and other known remedies. In such cases I have found antipyrin to act with speedy relief. Urticaria, being a neurosis of the skin, we have here another illustration of the broad field of usefulness antipyrin possesses as a neurotic remedy.

To mention the highly beneficial effect of antipyrin in headaches and neuralgias would be repeating what is now an oft told tale, but I find in my notes several cases occurring in children that have been relieved promptly as in adults.

In conclusion I would express the opinion that antipyrin is the type of the most useful remedy, with the broadest field for action, that has come to our notice since the introduction of chloral and carbolic acid.

47 West 56th street.

TROPHO-NEUROSIS OF THE ORAL CAVITY, WITH ESPECIAL REFERENCE TO SYPHILITIC NECROSIS.

Read in the Section of Dental and Oral Surgery at the Forty-first Annual Meeting of the American Medical Association at Nashville, Tenn., May 22, 1890.

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At the meeting of the Southern Surgical and Gynæcological Association held in Nashville, November, 1889, I had the pleasure of presenting certain views regarding the relation of trophoneurosis to the phenomena of syphilis. In that essay I endeavored to show the dependence of every phenomenon characteristic of syphilis upon certain more or less obscure changes in the sympathetic nervous system (organic or functional, temporary or permanent), which resulted in aberrations of its trophic function. The more thoroughly I studied the phenomena of syphilis, the more firmly convinced I became not only of the dependence of syphilitic phenomena, but that of many other morbid changes which have hitherto appeared inexplicable, upon tropho-neuroses.

In a general way it may be said that disease affecting the animal body can only be produced by one of two things, viz.: (1) Perversion in the quality or quantity of the nutritive material which constitutes the pabulum upon which the various structures of the body feed; (2) some perversion of that nervous energy upon which building up of the tissues depends. As in building a house, if the workman be skilled and his materials good, the result is a good house. So in the building up of the tissues; if the nutrient pabulum (or lumber) be first-class, and the workman (the nervous system) performs his functions properly, the result will be healthy tissue. Now, what is it that acts as a governor for the process of tissue building? Certainly the sympathetic nervous system. The sympathetic system, through the medium of its trophic fibres, indubitably presides over the functions of nutrition, of waste and repair. Incidental to repair we have a reproduction of cell growth through the medium of the leucocytes. If the integrity of the sympathetic ganglia or their efferent nerves be impaired, the

young cells in the process of growth, instead of developing into a normal deposit of connective tissue cells, fail to become perfectly differentiated; as a consequence they retain the physical characters of young or embryonal cells. Not only do these young cells fail to be transformed into vigorous tissue structure, but they manifest the usual tendency of embryonal cells, viz.: to rapidly proliferate and speedily degenerate.

It is found on section of the syphilides, wherever found, that they are composed of cells in no wise different from young connective tissue cells. Fessenden Otis lays much stress upon this point. There seems to be but little difference between the syphilized cell and that progenitor of all connective tissue cells—the leucocyte. An increased rapidity of proliferation, perhaps a trifling increase in size upon the average, and the power of infecting healthy tissue, are the only new properties which the cell acquires by virtue of its syphilization. With the exception of the property of infectiousness, these qualities are possessed by all imperfectly differentiated cells. Place a young connective tissue cell and a syphilitic cell under the microscope, and we cannot tell the one from the other.

The morbid propensities of embryonal cells are well shown in cancer, in which disease, if Cohnheim be correct, they are the foundation of the morbid process. I firmly believe that malignant growths are explicable upon the same grounds as syphilitic neoplasia. It has seemed to me that the reason an injury of the tissues in one individual is followed by cancer, while in others normal repair occurs, is that in the former the functions of the sympathetic system are impaired, and instead of a normal differentiation and building up of the cells, there occurs a heaping up of embryonal cells. There is practically no difference between such embryonal cells and those which, according to Cohnheim, remain imprisoned in the fœtal structures to develop under proper stimulus into cancer in after life. The development of imprisoned embryonal cells this celebrated pathologist believes to be the *fons origo et mali* of cancer.

In considering abnormal tissue growth we must first consider the medium through which normal tissue growth occurs. If we accept the view that normal tissue repair depends for its performance upon the integrity and function of the sympathetic nervous system, we must *nolens volens* accept the view that any pathological process in which a heaping up of tissue, degraded or otherwise, occurs, is produced through the medium of some aberration of the trophic function of the sympathetic. This, it seems to me, is an indisputable fact, and is the basis of my theory of the tropho-neurotic character of the phenomena of syphilis. There are numerous trophic disorders which are pertinent to the question of the dependence of the lesions of syphilis on a sympathetic neurosis; for example, bed sores, perforating ulcers incidental to paralysis, certain abscesses, changes in the bones and joints in spinal arthropathy or Charcot's joint disease, and gangræna vasomotoria. Raynaud's disease, a peculiar nervous affection, is attended by gangrene of localized areas of the skin and certain portions of the extremities, which are unquestionably due to nervous disturbance. This disease was long confounded with erysipelas. Its phenomena are those of ischæmia of tissue, followed by erythema, cyanosis and gangrene.

I have noticed in syphilis, in certain instances, a marked tendency to fluctuations of vaso-motor impulse. Thus I have observed a number of cases in which there was a marked tendency to epistaxis, hæmoptysis, hæmorrhage from the bowels and kidneys. In several cases complicated by stricture I have observed a tendency to hæmorrhages from the urethra. Certain diseases of the skin have been described, and quite appropriately, as dermato-neurosis.

Leloir states that certain lesions of the skin are a premonition of threatening neurotic trouble of a serious character. For example, one of his patients suffered with a severe herpes zoster of the right side of the chest for a short time, having been previously healthy. Six months later paraplegia and paralysis of the sphincters occurred as a consequence of syphilitic myelitis. In a second case he observed the existence of a patch of non-parasitic alopecia areata for a short time prior to the development of the cerebral lesion of syphilis. The same lesion in another case apparently heralded the development of cerebro-spinal syphilis and general paralysis. In still another case labial herpes and scleroderma in circumscribed patches occurred from time to time for several years, and were followed by general paralysis.

Duplay records one case in which zoster of the inferior extremity led to the discovery of Pott's disease of the spine. In another case, recorded by the same observer, œdema of the lower limbs, with pigmentation of the skin, led to a diagnosis of spinal meningitis.

Raymond cites a case in which intense herpes of the pharynx preceded a cerebral lesion. Eczema and neuralgia oftentimes precede the development of chorea.

In my essay upon tropho-neurosis in syphilis I called especial attention to the association of alopecia areata and herpes zoster to neurotic disturbances. My friend, Prof. Ohmann-Dumesnil, of St. Louis, has reported several cases of alopecia due to traumatism.

My attention was first called to the possible dependence of syphilitic lesions upon tropho-neuroses by a series of cases of necroses of the maxilla, alveolar processes, palate and bones of the nose, occurring in cases of tertiary syphilis. In

studying these cases I was led to pursue the line of thought a little further, and I found that evidences of the dependence of syphilitic phenomena upon organic or functional disturbances of the sympathetic system are quite positively manifested here and there along the whole line of morbid phenomena developed in the course of the disease. There is not a lesion of syphilis which cannot, it seems to me, be explained upon this theory. Even the affinity of syphilis for the lymphatic glands appears to be analogous to those phenomena which occur in Hodgkin's disease and leucocythæmia—diseases which are inexplicable save upon the neurotic theory. In the late or sequelar syphilides there is a special tendency to disturbances of a tropho-neurotic character. It would appear that syphilitic infection not only has a peculiar affinity for the sympathetic nervous system, but that this affinity is particularly marked in the upper or cervical portion of the sympathetic. All through the disease the proportion of lesions about the head, face and mouth is relatively much larger, even under the best treatment, than in other portions of the body. The parts supplied by the fifth cranial nerve appear to be particularly susceptible. There are few cases, indeed, no matter how thoroughly they may be treated, that are not affected, at one time or another, with lesions of the lips, inner surface of the cheeks, tongue, throat and scalp. Cases are frequently met with in which the initiatory and active periods of the disease have been passed through without serious trouble, when suddenly and without warning serious destruction of the nasal, palatal or maxillary bones occur.

I have long been impressed by the peculiar course of some of the lesions of late syphilis, particularly those affecting the head, face and oral cavity. It has seemed to me that the destructive effects exerted by the morbid process upon the bony tissue is greatly disproportionate to the objective and subjective phenomena which precede the actual destruction. For example, I think that upon reflection it will be found that the objective morbid phenomena which precede the necrosis *en masse* of various parts of the palate, superior maxillary and nasal bones are comparatively slight, when we take into consideration the fact that the affected bone is entirely destroyed. Indeed, it often seems that the first objective phenomenon perceptible in cases of necrosis of the parts mentioned is incidental, not to destruction of the bone *per se*, but to an attempt on the part of nature to rid the tissues of offending foreign material. Thus, I have observed cases in which the greater portion of the palate was entirely destroyed, yet very little manifestation of trouble was apparent until suppuration occurred, with a small point of ulceration of the soft parts covering the bone, and the discharge of a small quantity of pus—a quantity, by the way, so small as to be entirely disproportionate to the extent of the morbid process. On passing a probe into the small sinus thus formed, one who is not thoroughly conversant with the peculiarities of such conditions will quite likely be surprised to find that a large portion of the bone is dead, and perhaps loose in the tissues. It will be found, upon observation of processes other than syphilitic, which produce necrosis or caries of bone, that there exists, prior to the death of the osseous structure, quite pronounced objective phenomena in the way of pain, swelling and deformity of the part, these symptoms indicating the existence of proliferated inflammatory material which subsequently produces, by simple pressure, destruction of the vitality of the bone. Those morbid phenomena in syphilis which involve bone or periosteum in the early part of the course of the disease are accompanied by relatively more prominent objective phenomena than those late lesions which are now under consideration; yet they are rarely followed by caries or necrosis. These processes, it seems, are reserved for the late secondary or sequelar period of the disease. Thus it will be seen that, although the local process is apparently more severe in the early cases, destruction of the vitality of the bone is not so likely to occur. There is a marked difference between the modes and diffuse subperiosteal swellings of early syphilis, and the condition of the bone and periosteum which precedes necrosis *en masse*, or, for that matter, caries in the late stage of the disease. In addition to the disproportion between the degree of destruction of bone and the objective phenomena preceding such destruction, another point worthy of comment is the fact that syphilis possesses the power of dissecting out definite portions of osseous tissue, apparently by cutting off their nutritive supply in a manner as cleanly as it could be done by the knife. Thus, I have specimens in my possession of the intermaxillary bone, portions of the alveolar process of the maxilla, the palatal and nasal processes of the superior maxillary, the molar and ossæ nasi, which became necrosed, loosened, and were removed from cases of late syphilis. These fragments of bone present as natural a conformation in many instances as in their healthy condition.

As far as I have been able to observe, there seems to be a special predilection in cases of late syphilis for those parts supplied by the fifth nerve, indicating that the portion of the sympathetic system which presides over these parts is particularly sensitive to the syphilitic impression.

I have found in some instances the tendency to unilateral destruction of osseous tissue particularly marked. Thus, the palatal process of the superior maxilla upon one side, or superior alveolus upon one side, may necrose and give way without the corresponding portion of bone becoming affected. Indeed, it seems that in most in-

stances in which necrosis attacks the bones of the face it is impossible to check the process until the line of demarkation represented by the anatomical outline of the affected bone has been reached. The peculiar manner in which one-half of a structure may be dissected away by the sequelar lesions of syphilis is exemplified by a case of syphiloma of the tongue which recently came under my observation, in which the sloughing of the organ was limited by the raphe. This case subsequently went on to malignant transformation. I removed the tongue by the galvano-cautery, the disease recurred, and the patient died of hæmorrhage several months later.

I have had several cases recently in which that portion of the superior maxilla corresponding to the intermaxillary bone was dissected out by the syphilitic process, with the resultant loss of the incisor teeth, the remainder of the jaw remaining intact. There appears to be a peculiar predilection of late syphilis for this portion of the jaw. I have seen several cases in which caries occurred in this situation, with a consequent loss of one or more perfectly healthy teeth. These cases have appeared to me to be so characteristic that I have come to regard the loss of the incisor teeth without any apparent cause as almost positive evidence of syphilis.

An interesting case illustrating the unilateral limitation of some late lesions of syphilis came under my observation recently. This was a gentleman who had an obscure history of syphilis, dating some years back. Several weeks before coming under my observation ulceration began at the roots of the molar teeth upon one side and extended outward upon the palate. When I first saw the case the ulceration had extended outwards upon the hard palate for about three-quarters of an inch, and forward to the median line, where it abruptly stopped. The appearance of the ulceration was quite typical. There was no disease of the teeth or jaws to account for it. Healing was quite rapid under appropriate antisyphilitic treatment.

Another interesting case of a somewhat similar character is that of a gentleman who had syphilis seven or eight years ago. For the last three or four years he has had occasional symptoms of the disease. A few months since ulceration occurred about the roots of the upper incisor teeth, and was attended with slight caries of the intermaxillary bone. The process was checked by appropriate treatment, the teeth, which were loosened, finally becoming perfectly solid. About six or eight weeks after the ulceration was healed the patient consulted me for supra- and infra-orbital neuralgia and hemicrania. It yielded readily to iodine of potassium in large doses. Within a few days the patient has again consulted me for paræsthesia of the right side of the face, which he noticed for the first time while being shaved. His face have been excessively tender previously, he very speedily noticed a lack of sensibility under the razor. Associated with this paræsthesia there is obscure pain, which he locates back of the eyeball. The *ensemble* of symptoms in this case points to central disturbance, and evidence a manifest predilection of the sequelar lesion for the fifth cranial nerve.

The association of obstinate tubercular syphilides with nervous syphilis is well known. It seems that the danger of involvement of the central nervous system is directly proportionate to that of severe syphilides.

In considering the tropho-neurotic character of the late lesions of syphilis, I do not ignore the fact that syphilis may act directly upon the nervous system in several different ways:

1. By the direct effect of syphilitic deposit upon the nerve cells or fibres, or membranes of the brain and spinal cord.

2. By changes in the membranous envelopes of the brain and spinal cord.

3. By deposits in and about the blood vessels, which induce circulatory disturbances.

4. By a proliferation and condensation of connective tissue, which remains after the syphilitic material *per se* has been removed.

There is probably a difference in the late and early forms of syphilitic lesion in the manner in which the tropho-neurotic element is brought about. Thus, it may be due, in the first instance, to a direct impression of the syphilitic poison upon the sympathetic nervous system; secondly, upon direct pressure upon the nervous structures; thirdly, upon a disturbance of function and nutrition of the nervous structures incidental to interference with blood supply.

It is probable that mercury acts upon the nervous system in very much the same manner as does syphilis. It is very difficult to differentiate late syphilitic lesions of the bones and of the mucous membranes from those directly due to the action of mercury. That mercury exerts a powerful effect upon the sympathetic nervous system is, it seems to me, shown conclusively by the phenomena of ptyalism, which cannot be accounted for solely upon the theory of the production of irritation. The well known power of mercury over the secretions is probably due to its influence upon the sympathetic ganglia. When the injurious action of mercury is superadded to syphilis, there is a more marked tendency to tropho-neurotic phenomena than in well treated cases of the disease. Indeed, the excessive use of mercury often seems to determine the predilection of late syphilis for the bones of the head and face. It is quite as capable of producing necrosis or destructive ulceration of these parts as is syphilis *per se*.

Positive demonstration of the dependence of the phenomena which I have outlined upon nerv-

ous disturbance is of course difficult, but the inferences which I have drawn appear to me to be logical.

In considering the question of trophic disturbances in their relation to destructive syphilitic processes, it is well to remember the familiar physiological experiment of section of the sympathetic in the neck of the rabbit. The same experiment is also interesting as bearing upon the facial congestion of early syphilis. The reddening of the ear of the rabbit, the inflammation and sloughing of the cornea incidental to section of the sympathetic, are certainly suggestive. To carry the analogy of this physiological demonstration a little further, I would call attention to the serious corneal trouble which sometimes results from herpes frontalis seu orbicularis.

The tropho-neurotic influence of syphilis appears to be chiefly manifested in the peripheral structures of the body. Thus, in late syphilis we have a tendency to brittleness and other morbid changes of the finger and toe nails. There is falling of the hair, due to intrinsic perversion of vitality of the hair follicle, and differing from the alopecia areata of the early stages of the disease. The most important evidences of the tropho-neurotic influence of syphilis is the malnutrition of the teeth observed in syphilitic children. In my opinion syphilis may impress several generations of individuals with a tendency to tropho-neurotic changes of the glands, teeth, nails, etc., long after syphilis *per se* has been eradicated. It is my opinion that scrofula is frequently the result of this neurotic tendency, *i. e.*, tropho-neurotic disturbance.

In a paper read before this Section at the meeting of the American Medical Association, June 12, 1886, I directed attention to the close similarity which exists between so-called canker of the oral cavity and certain syphilitic lesions. This resemblance I believe to be due to the fact that both are the result of tropho-neurotic disturbances; in the one case produced by syphilis, or syphilis and mercury combined, and in the other to general perversion of nutrition, or, more frequently, disturbances of the digestive apparatus.[1]

Dr. Hadden[2] reports four cases which I believe to be due to tropho-neurotic disturbance. These cases were absolutely resistant to treatment, and consisted of a sensation of intense unbearable burning of the tongue and often the lips and roof of the mouth. In two of these cases there were certain objective symptoms. In one, a woman of 35, there was a small epulis; in another, a woman of 75, who was emotional and nervous, and had for many years suffered from nettle rash, the gums finally became involved and the teeth turned black and decayed.

[1] In a paper read before the North Texas Medical Society I called attention to the relation of herpes progenitalis upon the disturbed ennervation incidental to syphilis. (Philadelphia Medical News, Feb. 8, 1890.)

[2] London Lancet, Jan. 25, 1890.

REPORT OF A CASE OF PARTIAL LARYNGECTOMY FOR CARCINOMA OF THE LARYNX.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association at Nashville, Tenn., May, 1890.

BY MAX THORNER, M.D.,
OF CINCINNATI, O.

Since a few years the subject of pathology and and therapeutics of cancer of the larynx has engaged the profession in an unusual degree. The object of the discussion was, above all, to ascertain the best method of treating cases of this kind, to find certain and distinct indications by which we might be guided under all circumstances. This object, however, has not yet been attained. The views of various authors are still so different from each other that in every single case of carcinoma of the larynx the question, what to do with it, will have to be answered according to the individual experience and views of the surgeon attending the case. The principal question that arises is if the chance of prolonging the life of the patient is greater by not operating for the local trouble at all, except performing tracheotomy whenever needed, or by intralaryngeal procedure, or by performing extirpation of the larynx, be it a complete or a partial one; and in order to answer this question definitely it is not only desirable, but absolutely necessary, that *all* cases of this class should be recorded. Thus we will obtain, finally, such an enormous amount of statistical material as to enable us to draw from it definite and generally accepted conclusions.

Mrs. F. G., æt. 51, married for four years, no children, consulted me in the beginning of February on account of loss of voice. Had been in fair health all her life, with the exception of fainting spells, to which she had been subject for many years, more so in the last two years, after she had had a slight attack of sunstroke. A sister had died from heart disease, and a brother is at present suffering from it. She had passed the climacterium without any unusual trouble. About a year ago she had been afflicted with hoarseness, which would, however, disappear at times, and then reappear again. Finally the hoarseness remained permanent and increased gradually until the voice became entirely aphonic, which had been the case for several months. There had been of late, and this only at times, a slight pain in the left side of the larynx, and an annoying, hacking cough was sometimes present.

Stat. præs.—Physical condition fair. Patient is a slightly built woman with very little adipose tissue. Physical examination shows no signs of pulmonary affection, and especially no valvular disease of the heart. Pulse 84, regular, rather weak. There is complete aphonia and slight inspiratory dyspnœa. The laryngeal region is free from visible or palpable signs of swelling, and

there is no perceptible tenderness to the touch. The pharynx is normal. The larynx shows generally some hyperæmia. The right vocal cord appears to be normal, the left one is not to be seen. The latter is covered by a tumefaction filling the place of the left ventricular band. Instead of the latter there is an ovoid swelling the size of a small cherry, filling completely the left ventricle and the ventricular band. This swelling is covered by normal mucous membrane, and its outlines are not lost in a continuity with the surrounding tissues, but are sharply defined from them, causing the tumor to protrude into the larynx, as if pushing the ventricular band before it. The surface of the tumor is somewhat uneven, the color of the mucosa slightly deeper than that of the surrounding tissues, except the mucosa covering the left arytenoid cartilage, which is also slightly deeper in color. The left arytenoid cartilage is somewhat larger than that of the other side. This tumor is moved, during phonation, towards the middle line, but there is no complete approximation. Probing the tumor conveys the sense of solidity. The lymphatic glands around the larynx and the trachea are not enlarged.

Although there was no trace of a specific infection, patient was put under pot. iodid. for six weeks, without the least change in the size or appearance of the tumor. In fact, the dyspnœa was at times worse than before. The tumor corresponded so closely to the description of that form of carcinoma so admirably set forth by Prof. B. Fränkel in his paper on "Carcinoma of the Larynx" (*Deutsche Med. Woch.*, 1889), which has its origin in the ventricle, and which he calls *carcinoma ventriculare*, that his description is almost a pen-picture of the case under consideration.

There could be no doubt as regards the diagnosis. It was, therefore, after a consultation with Prof. J. Ransohoff, deemed the best to advise an operation, and under the circumstances, the affection apparently being limited to the left side of the larynx, a partial laryngectomy appeared to be indicated.

Operation April 15, 9 A.M. Present: Prof. Ransohoff, Drs. J. L. Krouse, J. E. Sommerfield, J. A. Thompson and M. Morris. Chloroform anæsthesia. An incision was made in the median line from the lower margin of the thyroid cartilage to the jugulum. Thereupon tracheotomy was performed below the isthmus of the thyroid gland. No hæmorrhage. An ordinary tracheotomy tube of the largest size (Hahn's sponge canula not being obtainable) was inserted and the anæsthesia continued through the same. The median incision was then continued upward to the hyoid bone and the muscles were lifted with a raspatory subperichondrially, as described by Lennox Browne, from the left wing of the thyroid cartilage, together with the perichondrium. In this way all hæmorrhage was avoided. After this the larynx was split open from below upwards. There followed some hæmorrhage, and an attempt was made to tampon the trachea from above with aseptic cotton tampons. As this was not satisfactory, a rolled pillow was put under the shoulders of the patient and the operation completed with the head hanging over the edge of the table. This proved to be sufficient to prevent blood from entering the windpipe. The hæmorrhage, coming mostly from the crico-thyroid artery, was readily controlled. It was then seen that the tumor filled the whole left ventricle, involving part of the left vocal cord. The left arytenoid cartilage was somewhat enlarged; the right side of the larynx was not affected. The swelling in the left side of the larynx did not extend upward to the upper margin of the thyroid cartilage and downward below the vocal cord. The left wing of the thyroid cartilage was then detached from those muscular attachments that had not been previously severed, by keeping the edge of the knife or the raspatory in close contact with it. This separation could be carried to the median line in the back, dividing the arytenoid and crico-arytenoid muscles from the posterior surface of the left arytenoid cartilage, thereby leaving all the muscles in front of the neck intact by simply separating them from the field of operation by retractors. Previous to this the crico-thyroid joint had been disarticulated, as it had been decided not to remove the cricoid cartilage. The thyro-hyoid membrane was now dissected closely to the upper margin of the left wing of the thyroid cartilage, and the left superior horn of the same was cut through at its base and allowed to remain, after which it was possible to lift the whole left side of the larynx with the tumor from its attachments. Then the mucosa covering the left arytenoid was divided in the median line closely to the cartilage, and the latter was then separately removed.

The hæmorrhage during these procedures, following the splitting of the larynx, had been trifling. The trachea above the canula was closely filled with iodoform gauze and a small-sized stomach tube introduced into the stomach from the wound. The latter was filled with iodoform gauze. Duration of operation, 1½ hours.

Patient rallied one hour after the operation. The temperature was then 99°, respiration 20, and pulse 84. During the following days the temperature ranged from 99.5° to 101°, respiration from 24 to 28, and pulse from 84 to 112. Nourishment was amply introduced through the stomach tube in the form of milk and whisky. The dressing was changed twice daily; the iodoform gauze plug in the trachea, which fitted closely, was renewed once a day. There was always an abundance of mucus and saliva in the wound, but none entered the windpipe. The dis-

charge from the tracheal tube was only during the first twelve hours somewhat tinged with blood; after that time there was a free but colorless discharge of mucus, which at no time had an offensive odor. There was never any pain in the chest, or dulness on percussion.

April 17, at noon, forty-eight hours after the operation, temperature 102, respiration 32, and pulse 112. Patient complained of pain on both sides of the neck above the wound. It was found that the upper end of the stomach tube had buried itself slightly into the tissues, where subsequently an emphysema on both sides of the throat had developed. The wound itself was looking healthy and was decreasing in size. The stomach tube was at once removed. In the evening of that day the temperature was 100, respiration 28, and pulse 96. The emphysema was gone and the patient complained no more of pain. For the purpose of feeding a stomach tube was introduced through the mouth.

Patient gained more and more strength, and was very cheerful. Asked to sit up on the third day, which was, however, not permitted. The wound was getting smaller and had a very healthy appearance.

April 19, on the morning of the fifth day, patient tried for the first time to swallow some solid food, and succeeded with but little pain and without any food entering the larynx. She repeated this at noon, and expressed her gratification at the result. In the afternoon, at 2 o'clock, her temperature suddenly rose, and was at 3 P. M. 104, respiration 36, and pulse 120. A very thorough examination of the wound showed the same to be in good condition. There was nowhere a retention of pus, the wound canal of the tracheotomy tube had a healthy appearance, and no trouble in the mediastinum could be ascertained. The discharge was pure mucus without any odor. No pain in the chest, no dulness on percussion. Giving her solid food was discontinued.

Five P. M., temperature 103, respiration 34, and pulse 120. From this time patient began to sink rapidly. She became restless and her temperature subnormal. Action of the heart became irregular and weak, respiration more and more labored. Stimulation very soon lost its effects. The extremities became cool, the pulse could often not be counted. Patient died at 11 P. M. with the symptoms of heart failure.

An autopsy was not permitted. Microscopic examination showed the removed tumor to be a typical carcinoma, developing from the ventricle. Although it cannot be denied that the fatal issue in this case was precipitated by the operation, the direct cause was, in my opinion, heart-failure on account of weak heart. The local condition of the larynx was certainly a favorable one for partial laryngectomy, and I would, under similar circumstances, not hesitate to pursue the same course.

SUGGESTIONS FOR THE RECONSIDERATION OF CRIMINAL JURISPRUDENCE AS AFFECTING INEBRIETY.

Read in the Section of Medical Jurisprudence at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 1890.

BY NORMAN KERR, M.D., F.L.S.,

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During the past twelve months I have noted two sentences (these are but a type of many others), which seem to me to have been as devoid of justice as of mercy. In France a soldier was condemned to die for, while in a state of intoxication, having struck his superior officer. In England, a man was sentenced to death for, while intoxicated, killing his mother-in-law.

When sober, and in full possession of their senses, neither of these accused was shown to have exhibited any inclination to insubordination or to violence. The criminal acts were conceived and committed when the doers were, for the time at least, *non compos mentis*, and incapable of forming a criminal intention, yet they were punished as severely as if they had harbored a criminal design. Granted that punishment was indispensable, how can there be a justification of inflicting as severe a penalty on a man who had no intention to offer violence, as on a man who deliberately and aforethought meditates the personal injury or death of his victim.

The exaction of the highest penalty of the law in such cases is a scandal to jurisprudence, undermining the beneficial influence and authority of the law, for the judicial office can be held in proper esteem only when wielded for the upholding of justice. Criminal procedure must fall in popular estimation when involved in the perpetration of injustice.

What is intoxication? Its determination, say from apoplexy certain stages of general paralysis and traumatic neurotic delirium, is often extremely difficult, if not impossible. Even if the sufferer be a teetotaler of the purest water, if he fall unconscious on the highway, either from rupture of a blood-vessel in the brain, from the pain of a fractured leg, from the agony of colic, from exhaustion or from any other cause, some average American or British bystander is sure to pour some alcoholic beverage down the non-alcoholic throat. The jubilee nephalist, as soon as consciousness returns, staggers on regaining his feet, probably mutters disconnectedly and so unintelligibly, that the spectators are of two minds as to whether curses or blessings are intended, their only common belief being that poor Eliphalet Nolt Jones is shockingly drunk, though this is positively the first time he has tasted

an intoxicant, and now only against his will.

On the threshold of our enquiry we are confronted with the need for a reconsideration of criminal proceedings.

If a man is to be punished for being "drunk or disorderly," or for any offence complicated with drunkenness, who is to decide whether he is drunk or sober? One of our London magistrates recently rebuked an inspector of police for calling in a medical practitioner to say whether a prisoner was drunk. The magistrate declared that there was no need to send for a doctor, a policeman was quite competent to settle that question. The publican is supposed by law to know when his customers are drunk.

Now this is often a most difficult problem even for a medical man, experienced in such cases. I have seen gentlemen at a dinner-table apparently sober though drinking freely, but the moment they stepped out into the cool evening air they took a bee line to everywhere, and appeared noisily drunk. I have had patients who had an unimpeachable reputation for sobriety, who never would have lost it had not some sudden call out of doors developed decidedly drunken manifestations. Again and again I have seen even medical advisers mistaken in their diagnosis, a few hours disclosing a serious brain lesion. Similarly, I have seen a fatal termination in a number of cases, where the individual had frequently been drunk before and had awoke to sobriety and vigor. When brought home, the friends had contemptuously said "drunk again," and left the victim to sleep off his drunken fit, he, alas! never waking.

The sub-normal temperature generally met with in intoxication and the alteration of only one pupil, are often valuable signs to go by, but they are not always reliable, as alcoholic symptoms and symptoms not necessarily associated with alcohol may occur cotemporaneously. In a sentence, in doubtful cases, the wiser plan is to wait till the purely alcoholic effects pass away. Otherwise, the supposed drunkenness may turn out to be apoplexy, coma, death, as is frequently recorded in the public press under the heading of "Drunk or Dying?"

Police procedure, therefore, ought to be reconsidered so as to secure the proper care and treatment of supposed drunkards (especially in a high enough temperature to counteract the loss of vital heat occasioned by alcohol), for a period long enough to allow the subsidence of the strictly alcoholic symptoms. Medical attendance should be secured in the presence of symptoms suspicious of danger, and a medical expert should be called when the question of diagnosis arises.

There is a large class of police-court cases which require special reconsideration. I refer particularly to "repeaters," to persons repeatedly before the court for drunkenness and offences connected therewith. To award short terms of confinement, with or without hard labor, is simply to supply the police-court inebriate with free quarters and board in a teetotal club-house, when he has so broken down that he is unable to go on drinking. There you keep him under fairly good sanitary conditions (often much more healthful than his own "diggings"), for a sufficient time to recuperate, and you discharge him in prime condition to resume anew his drunken orgies. Your police-court system is thus a systematic and efficient training school of inebriety. The inebriate is not really punished, but coddled and confirmed in his perilous habits. The persons whom you do punish, and the punishment often falls terribly heavily on them, are the miserable wife and the helpless little children of the drunkard, whom you deprive of whatever maintenance they received from the parent whom you pamper and still further demoralize.

Let us turn now to graver crimes.

To remove any misapprehension, let me once for all disclaim saying anything in extenuation of such persons, if there be such, who resort to alcohol in order to commit crime. If any one when sober and in his right mind deliberately determines on the commission of a criminal offence, and drinks to give him Dutch courage to carry out his illegal design, such an one merits the severity of the law.

But if a man or a woman or a child, having no criminal intention, is "overtaken in liquor," and while thus "overtaken" offends against the majesty of the law, his state of bodily and mental health at the time when the deed was done, ought to be rigidly exploited.

The first point to elucidate should be: Was the person, at the time, in a condition to understand the character and consequences of his actions?

The cause of his condition is another matter to be dealt with hereafter. His actual condition at the time is our initial task. There are degrees and varieties of intoxication. An intoxicated person may kill some one without any murderous intent, with no consciousness of the act, and with no remembrance of the murder on regaining sobriety. In such a case there ought to be no question as to his irresponsibility. Yet men have been executed for an offence which they neither intended, nor were conscious of, nor remembered. In many cases, when made aware of what they had done, the unfortunate culprits were as amazed as they were dismayed and repentant.

The degree of intoxication may not be so profound. The inebriate may be conscious that he is doing wrong, may remember having done it, and yet at the time may have been hurried away by some convulsive and overwhelming morbid impulse, which he was powerless to resist. He was beyond his own control. Of examples of

this type there are many among our criminal population, in whom alcoholic or other inebriate excitation has suddenly developed both homicidal and suicidal tendencies. In one instance for which a young man was hung the homicidal impulse was from chloral, in another from Indian hemp, in others from alcohol. There was no such impulse before the inebriate outbreak.

The person may be under influence of liquor though not "drunk" in the common acceptation of the term, when he commits a crime. His brain is affected by alcohol or some similar anæsthetic. He offends against the law, it may be unconsciously with no knowledge or remembrance of the act, it may be consciously but unable to resist an inebriate uncontrollable convulsion. In such cases the accused ought not to be held responsible.

The criminal act may be committed, undesignedly and at rare times unconsciously, when the mental perversion is post-alcoholic. The morbid brain disturbance may persist for a time after the individual has abandoned all intoxicating narcotics.

There are but a few states of cerebral disturbance which ought to carry criminal irresponsibility. Our criminal procedure in all such cases (which really present various phenomena of *disease*) requires radical reconstruction.

Again, in all criminal charges complicated with inebriating agents, the true extent of accountability cannot be ascertained unless the health history of the accused and of his family relatives (including two generations back, if possible) be carefully traced.

If a suspect possesses, from any cause, an acquired or inherited constitution which renders him more susceptible to, and less able to resist, narcomaniacal excitation than the bulk of his fellows, that constitutional weakness ought to be duly considered. Thankfully have I observed the ruling of at least one English judge, (Baron Pollock), to the effect that heredity should be taken into account in fastening criminal responsibility on an inebriate, the last person to realize his own weakness being the weak one himself. Another (Chief Baron Palles) directed a jury that a nurse should not be held accountable, if by reason of long continued watching her powers have been so worn out that a smaller quantity of liquor than ever affected her before, rendered her more liable to become beside herself. A third (Lord Young) refused to send to a jury a mother (accused of starving her baby), whom he discharged (with the regret that he could not send her to a Home for Inebriates) on the ground that drinking too much whisky was not a crime, and delirium tremens was a disease. Best of all, Mr. Justice Day has ruled that "whatever the cause of the unconsciousness, a person not knowing the nature and quality of his acts, is irresponsible for them."

The only plea, for the execution of a person found guilty of a capital offence while intoxicated, which seems to me at all plausible, is based on economical considerations. It is cheaper to hang an inebriate than to be at the expense of keeping him for a lengthened period, but I do not apprehend that much stress will be laid by any member of the public-spirited American Medical Association on this plea. From every other point of view a new legal practice based on the recognition of a true narcomania (a mania for narcotism by any narcotic) as characteristic of inebriety, would be an undoubted advantage.

We know little as yet of the actual extent of the nerve and brain structural degradation predisposing or exciting to, or resulting from, inebriate indulgence. But we know enough to inspire us with a desire to learn more, as well as to have revealed clearly and distinctly the existence, in the constitution of not a few drinkers, of perverted abnormal cravings and impulses, of appreciable loss of self-control, of diminished perception, of premature waste and deterioration of brain tissue, of that ill-balanced mental state, constituting a disease which, if not insanity, is closely allied thereto, a physical, mental and moral malady which dulls the senses, dims the intelligence, confuses the judgment, paralyzes the will, incompatible with sanity and righteous responsibility, in which, in the graphic words of your true-hearted, guileless and poetic Jacob Greenleaf Whittier:

> "Tiger passions, which had slept
> In childhood's better day,
> Unknown, unfelt, arise at length
> In all their own demoniac strength."

THE VALUE OF ILLUSTRATION IN THE LECTURE ROOM.

Read in the Section of Dental and Oral Surgery at the Forty first Annual Meeting of the American Medical Association, Nashville Tenn., May 21, 1890.

BY L. D. McINTOSH, M.D., D.D.S.,
OF CHICAGO, ILL.

The object of this short and hastily written paper is to point out to those who are interested in the work of the lecture room, what we believe to be one of the best methods of illustrating the various branches taught.

I think I am safe in making the assertion that teachers in all departments of study see the necessity of illustrations. Abstract teaching alone, either by lectures or recitation, fails to produce as permanent an impression on students as it does with illustrations. For example, we may give a description of a city or some place we are familiar with, to a class of students and afterward ask them to describe the same, we find that no two understand the description as it was given.

If views had accompanied the description of the place, showing the streets, buildings, etc., each student would have formed almost as correct an idea, as though he had visited the place.

We see how attractive and instructive the public lecturer can make his subject, by using views of the scenes he describes. It has become a necessity for him, if he desires to describe his travels, to illustrate them. The public demand this and enforce their demand by their absence, when no illustrations are shown, and on the other hand, their approval by the large audience present, when his descriptions point to life-like scenes.

The following illustrates the value of illustrated lectures, and the permanent impression produced on an audience.

Some twelve years ago I gave a series of popular illustrated lectures in Chicago, in my own parish. One lecture was entitled "Microscopic World." In the course of the lecture a description was given of the structure of a human lung, its capillary net work, conjestion, etc., using a microscopic section projected on a screen, so that it could be plainly seen by all of the audience. Many of the people referred to the illustration afterward saying, although they had studied the subject before, this was the first time it had been made clear to them. Only last winter a gentleman who was present at this lecture referred to the illustrations in this way. He said, "I am just recovering from a severe cold which came near resulting in conjestion of the lungs. I imagined I could see the fine net work of blood-vessels, in which the blood had ceased to flow, and I knew the thing to be done was to get it to circulating again. I remembered what you said about counter-irrritation, and the application of heat to bring the blood to the surface of the body, and thus relieve the conjested lung. I produced free perspiration, applied mustard plasters freely, and was relieved in a short time."

This simply shows the impressions produced by the illustrations. We can remember the lasting impression produced on us when we were young by the itinerant scientific lecturer. I think my love for scientific study was awakened by listening to an illustrated lecture on Natural Philosophy, when I was not more than ten years of age. It was not the words or name of the lecturer that I remember, but the experiments which seemed very wonderful to me, and are as vivid to-day as though I saw them but yesterday.

Some ten years ago I attended a medical society in a neighboring State. An evening was devoted to microscopic illustrations, using a projection microscope. The public were invited with the idea to entertain and at the same time show the scientific side of the study of medicine. A large audience was present and all seemed interested. The work of that evening passed from my mind. Some four or five years afterward a physician called upon me; in his conversation he asked if I remembered giving microscopic illustrations and assisting Dr. A., at a certain State medical meeting. He said he was present, though not a physician at that time, and those illustrations seemed very wonderful to him. He said until that time he had looked on the profession of medicine with indifference, but what he saw that evening was the first incentive to commence its study. I afterward learned that this man was an ex-Governor.

I am often chagrined and disappointed after carefully writing a description of a scientific instrument and the directions for its use, to find the purchaser has either failed to comprehend them, or they do not give the idea clearly.

A well posted physician not long since, obtained an instrument for electric measurements. After several unsuccessful attempts to use it he wrote me of his failure. He afterwards brought the instrument to me. We placed it in proper position with connection and it worked all right. There was one point in the directions which he did not interpret as it was intended it should be, therefore his failure. But when he saw it connected and used the directions were plain to him.

The use of every scientific instrument and process, to be clearly understood, should be demonstrated and illustrated. Unless illustrations accompany the description the idea is only partially comprehended.

All descriptions in applications for patents must be minutely illustrated in detail, and even then the expert examiners are often obliged to obtain models to aid them.

If illustrations are so necessary to aid experts in comprehending descriptions in a certain special line, how much more does the student need the lectures illustrated, to which he listens.

In nearly all our schools, from the primary to the highest grades, the teachers see the necessity of illustrating their work as much as possible, and are constantly devising apparatus to do this more perfectly.

In the departments of chemistry, physiology, anatomy, materia medica, microscopy, histology and pathology, operative and prosthetic dentistry, in fact all scientific study, teachers use illustrations. Yet with all that is being done we believe that this work is in its infancy.

If there was a greater effort to make a subject plain by illustration, the description cut short, given in few words and to the point, the student would retain what he sees and hears.

The scientist and even the office man has caught the spirit of illustration. When they take their vacation a Kodak Camera is their constant companion. By its aid they bring back pictures of the country they have visited to show their friends. Even the clergyman finds that he

can interest his hearers by giving an illustrated sermon, and fill the seats that would otherwise be vacant.

I believe there is no way of illustrating as easily, clearly and cheaply, a great part of the lectures in science, medicine, and dentistry as by projection. We have at our command very perfect apparatus for this work. We can show diagrams, photo-micrographs, micro-photographs, microscopic specimens, opaque objects, chemical reactions, crystalization, polarization, etc., to large classes, as easily as to one person.

To make this point clear I will give a few illustrations. Suppose my subject for consideration to-day is the circulation of the blood. Here we present to the class a diagramatic representation of the systemic circulation, and point out its course through the vena cava into the right auricle to the right ventricle, through the pulmonary artery to the lungs, through the capillary net work surrounding the air cells, back through the pulmonary vein to the left auricle, into the left ventricle through the aorta and on through its round of circulation. Let us now project a microscopic section of lung. Here we see the ultimate capillary net work surrounding the air cells, connective tissue, etc.; with other specimens we could show the epithelial lining, in fact follow out all the detail and minutiæ on the screen as perfectly as though we had our specimen on the stage of a microscope, and we have this advantage; we can describe it to all the class as easily as to one member, and can point out any particular structure—which we cannot do when we use the ordinary instrument. We will take another example for illustration. A diagram of a tooth showing the enamel, dentine, etc., and follow with a microscopic specimen. This we can see on the screen almost as plainly as a diagram. With these illustrations the way is paved for intelligent work with the microscope in the laboratory. When a student mounts a tooth section and places it under the microscope, he sees a familiar object. Just what he has seen by the aid of projection and heard described, even to the color and delicate tints of shade. Had the lecturer's illustrations been given on a blackboard, instead of by the aid of actual specimens projected on the screen, he would not have recognized them when he came to use actual specimens under the microscope.

We will refer to another illustration that can be made very instructive and interesting to a class, viz.: the cirulation in the capillary net work of a small fish, or foot of a frog. Last winter I projected by the aid of sunlight the circulation in the foot of a frog before a class. The capillaries were shown from $\frac{1}{2}$ to $\frac{2}{3}$ of an inch in diameter, the red blood corpuscles could be plainly seen coursing through them, with now and then a white one, cutting across lots; when the web of the foot was pricked with a needle the vessels conjested around the wound, and the wounded end of one capillary projected into the opening (which appeared about three inches in diameter). The blood corpuscles were ejected in the stream with each impulse of the heart. The circulation became slower and slower until the conjestion was complete; the foot was released, rubbed to establish the circulation, and after a short time placed again under the field of the microscope. The circulation was now seen over the entire field, except the wounded part.

In this short hour we had seen the circulation in the capillaries, the migration of white corpuscles, conjestion, a bleeding capillary (showing that the impulse of the heart extends through these small vessels) and the establishing of the circulation by massage, after it had ceased.

Could any description given have had the vivid impression on those students as the illustration described? We might continue these illustrations by projecting specimens of every tissue of the body, but we think that what has been shown will illustrate our point. As before stated all branches in science, medicine and dentistry can be very fully illustrated in this way.

The anatomist can use photographic transparencies of any part of the body, and gain much in accuracy and size, over the use of charts and drawings, as the objects can be greatly magnified and made plain to a large class.

The chemist can use this method of illustrating to advantage in the lecture room by projecting reactions, crystallization, electrolitic action, etc., which enables the student to begin his labratory work with a clear idea of what he is to do.

The physiologist is dependent on illustrations to make his lectures clear, and is obliged to refer to anatomical charts and microscopic specimens.

The teacher of pathology is equally interested in illustrating his work.

We had a fine illustration of this work a year ago at Newport, when we listened to Dr. Andrews and saw his beautiful photo-micrographs of fissures in sections of teeth. All who were present will remember Dr. Sudduth's illustrated lecture ("The Products of the Epiblast"). At its close a prominent physician was asked what he thought of it. He said the illustrations were the most perfect he had ever seen, in following the embryonic tooth from the first illustration to the last, he said "I could almost see that tooth grow."

This method of projection is not confined to transparent objects. Opaque objects as well, can be magnified and projected on a screen. The principal is not new, but its application to a projecting microscope, we believe is.

Some two years ago a scientist desired me to make for him a projecting microscope, to project

objects by the aid of oblique illumination. In constructing the instrument I found with a little modification it could be made so as to project opaque objects. Without taking time to describe it I will give a few illustrations of its use.

We will place a tooth on the stage and by the aid of reflection project a clearly defined image on the screen. In this manner any small opaque object can be magnified and plainly shown to a class. Malformations of teeth and roots, pulp nodules, fissures, etc., can be shown by making transverse and longitudinal sections, or any small instrument or mechanical devise can also be shown in this way.

We believe the teacher of operative dentistry will find in the projecting of opaque objects a new field of illustration.

We also believe this method of illustrating by the aid of projection is in its infancy.

There is no want of apparatus, or light for illumination, but there is no complete list of objects, either photographic or microscopic; each teacher is at work in his own way, and uses such specimens as are within his reach. We have text-books profusely illustrated and systematically arranged, now what is needed is photo diagrams, photo transparences, and typical microscopic slides, so that the text-books and lectures can be fully illustrated on the screen before the class.

Drs. Sudduth, Andrews, Hayes and others, have done much in this direction, each in his line of work. Others are at work in their specialties. We trust the time is not far distant when typical objects properly arranged in sets both photographic and microscopic, can be as easily obtained as text-books on the various scientific subjects.

The teacher will then have his notes before him in his illustrations, he can abridge his lectures, this being accomplished the poor student will not feel that he is being talked to death.

MEDICAL PROGRESS.

TREATMENT OF ANTHRAX.—DR. POLAILLON finds that the best method of treating anthrax is by means of caustic applications, and of these he finds the paste of Canquoin the most manageable and efficacious. The paste consists of chloride of zinc 1 part, wheat flour 2 parts, and water in sufficient quantity to make a firm paste, which should be made up in the form of bacilli and hardened by drying. When the anthrax is in process of suppuration and when the skin has been perforated at several points the bacilli are pushed into the core through these openings. In a few hours the core forms a solid mass separated from the healthy tissues by a zone of cauterized tissue, and in a few days this eschar sloughs off, leaving in its place a granulating surface which rapidly cicatrizes. When the core begins to form and appears only by a whitish punctated appearance on the skin, openings should be made for the introduction of the caustic bacilli by means of the bistoury or the thermocautery. These punctures should be more or less numerous in proportion to the size of the anthrax, and should be about 2 centimetres apart. An eschar is thus made throughout the extent of the anthrax; sloughing quickly takes place, and the course of the disease is considerably shortened. At the very beginning of anthrax formation, before there is any suppuration or fever, treatment should be limited to emollient applications until such a time as the core makes its appearance and it is proper to use the bacilli. If, however, there is intense febrile action and the anthrax is large, there should be no hesitation in introducing the bacilli. In all cases the author covers the surface of the anthrax with thick compresses saturated in a solution of carbolic acid, or preferably a sublimate solution of the strength of 1–1,000. He also applies a poultice of linseed meal made with the sublimate solution, thus obtaining both an emollient and an antiseptic action. This treatment has the disadvantage of being painful for two or three hours, but it produces a rapid cessation of the fever and transforms, in the course of a day or two, a grave infectious disease into a simple wound. The author cites the results obtained by this treatment in support of his assertions. In seventy-five cases of anthrax, some of which were enormous, treated by cauterization with the chloride of zinc bacilli, there were seventy-four cures and only one death. The latter was in the case of a man 44 years of age who had an enormous anthrax on the back. He suffered from glycosuria of grave form, and had been treated very irregularly at home for a month. Having been admitted to the hospital, the author hastened to make a crucial incision by galvanocautery and pierce the anthrax with the caustic bacilli; diffuse inflammation, however, set in, and the man died a week after admission to the hospital. The average length of cure by the above described means has been twenty-one days.—*Jour. de Méd. de Paris.*

HOSPITAL OBSTETRICS.—The Brussels Obstetrical Clinic consists of two departments, in one of which clinics are given, while in the other the midwives are instructed; DR. SAINT MOULIN has been in charge of the latter since 1886. Shortly after he took charge an epidemic of puerperal fever broke out, which in five months proved fatal to six of the 193 patients. The hospital was thereupon closed for 14 days and disinfected. When it was reopened sublimate was introduced as a disinfectant to take the place of carbolic acid,

which had formerly been employed; furthermore, precise and thorough disinfection of the parturient patients was introduced, together with similar measures for examiners and operators; avoidance of unnecessary examinations was also insisted upon.

After removal of the placenta the uterus was douched with 2 litres of a ½ per cent. sublimate solution during the first three days, and the vagina 3 times a day with a ¼ per cent. solution of the same. In spite of these measures there were thirty-three cases of fever in the next five months, but none of the patients died, and an improvement in the morbidity also took place. Saint-Moulin attributed the appearance of the epidemic to the extensive construction of canals, in the immediate neighborhood of the hospital, which was coincident with the epidemic.

Among other facts of interest in connection with this report is the treatment of perimetritis and peritonitis by hot applications, leeching and vesication. An interesting case is reported where, after an easy labor in the seventh month, a thrombus of the vulva formed which extended on the second day as far as the anus. The probable cause of this occurrence was arterial atheroma, a condition that was manifested in other parts of the patient's body. In two cases of narrow pelvis where it was desired to induce labor, hot vaginal douches repeated every two hours were employed, complete dilatation being produced by eight applications of this treatment. In a lying-in patient eclamptic attacks appeared on the eleventh day, the urine being free from albumen. In another case of eclampsia psychical disturbances appeared after delivery, but soon disappeared.—*Cent. für Gyn.*

Cocaine in Surgery.—Reclus, of Paris, after an extensive experience in the use of cocaine, is abundantly satisfied with its action. Local anæsthesia can be produced by it either by penciling the mucous membranes, or by means of interstitial injections. The superficial application is insufficient to produce as lasting anæsthesia, although it is useful in the operation of dilating the sphincter ani and in washing out joint cavities with strong solutions of carbolic acid. Reclus has performed more than seven hundred operations under cocaine anæsthesia, and has always succeeded in obtaining an anæsthesia lasting from three-quarters of an hour to one hour. By following certain rules inflamed as well as normal tissues can be rendered anæsthetic. The needle should first be thrust into the cutis and a few drops of a 2 per cent. solution injected; gradually thrusting the needle deeper and deeper, the solution is introduced by drops until the entire quantity is exhausted. In this manner the solution is evenly distributed through all the tissues and until complete analgesia is produced. The area thus anæsthetized is about 2 cm. wide, and here the incision must be made. If the incision is to be made with the thermocautery, it must be done by a single stroke, because heat rapidly dissipates the action of cocaine. Reclus has observed no injurious effects from cocaine. In the literature of the subject he found four fatal cases from cocaine poisoning operations, but these were cases in which too large doses were given, viz.: 0.75 grm., 1.20 grm., 1.25 grm., and 1.50 grm. He explains all the ill effects resulting from the use of cocaine by the introduction of the solution into a vein; this accident, however, is easily avoided by proper precaution. The average dose of cocaine is 10–12 ctgrm.

A Simplified Method of Discovering Koch's Bacillus in the Sputum.—The difficulties experienced with the present methods of staining the tubercle bacilli, both in the amount of time required and the proper degree of heat and coloring to be used, have led Dr. E. Dineur to propose a method which in his hands has yielded excellent results. He places a few drops of the sputum upon a watch glass, adds first 2 or 3 drops of a concentrated alcoholic solution of fuchsin, and then by means of a glass rod a drop of carbolic glycerine (25 parts of carbolic acid and 100 parts of glycerine); the mass is then well stirred. The mixture is then exposed for a few minutes to a temperature of 80° to 100° C., the sputum becoming appreciably thickened thereby. By means of a needle a portion as large as a pin's head is placed upon the slide, together with a drop of pure or diluted (1:1) glycerine, and the cover glass is then applied. At the edge of the latter he places a drop of diluted (1:5) sulphuric acid, watching through the microscope the effect produced upon the preparation. "The various morphological substances, the white blood corpuscles, epithelial cells and bacteria gradually grow pale and disappear; the bacillus alone persists a sufficiently long time and appears stained a beautiful red upon a colorless field." In this method, as in the usual ones, the author employs the Abbe condenser.—*Cent. für Bak. und Parasitenkunde.*

Treatment of Diphtheria by Developing Erysipelas.—Babtschinsky (*Inter. Klinische Rundschau*) describes the case of his son, who was taken with a severe form of diphtheria, and in a few hours his life was despaired of. Shortly after the outbreak of the disease a slight scratch was accidentally made over the nose, and from this point a general erysipelas began. With the development of the erysipelas the diphtheritic symptoms began to disappear, the temperature sank, the delirium subsided, the membrane and throat symptoms cleared up, and convalescence set in. Since 1884 Babtschinsky has often ob-

served similar cases. In the village of Lissanka a ten-year-old boy was taken with a severe form of diphtheria, accompanied by a high temperature and infection of the nose. The attack was severe and gave little hope of recovery. Later, facial erysipelas developed, and with the advent of this complication the diphtheritic symptoms disappeared. A third case occurred in the same village. A two-year-old child was attacked with diphtheria. On the third day, when the disease was at its height, erysipelas appeared upon the foot and gradually extended to the groin. With the advent of this disease the diphtheria disappeared.

The author, from these three cases, concludes that there is an antagonism in the infectious principle in these two diseases. At one time he had three patients, one with facial erysipelas and the other two with diphtheria; of these two one died and the other was inoculated near the submaxillary gland with blood taken from the erysipelatous patch of the first patient. The evening of the same day redness developed at the point of inoculation and extended over the face and brow. With this the diphtheritic symptoms disappeared.

In 1888 fourteen inoculations were made from pure cultures of the erysipelatous cocci upon agar-agar. In twelve cases the development of the disease took place, while in two death was too soon after the inoculations, in one case two and the other five hours. In the other cases the erysipelas developed in four, eight, ten and twelve hours after the inoculation. In the family of a peasant six children were taken with diphtheria; their ages ranged from 2 to 15 years. The disease was of gangrenous form, and was especially well developed in the second child, aged 4, whose throat was covered with membrane, the glands swollen, and the nose filled with a mass of membrane, pus and blood. In five of the children there was distinct improvement in all the symptoms twenty-four hours after the inoculation, and on the fourth day the diphtheritic symptoms had practically disappeared. The oldest child, who, notwithstanding the throat symptoms, had gone to work in the field and was not inoculated, died of gangrenous diphtheria. In the remaining cases the results were substantially the same as those detailed. No medicament of any kind was employed, only a general disinfection of the dwellings.

DIAGNOSTIC SYMPTOMS IN TRAUMATIC NEUROSES.—RUMPF (*Deutsche Med. Wochenschr.*, xvi, 1890) describes a symptom which has not yet been observed, or not sufficiently studied, and which, from its objective character, is valuable. The symptom consists of fibrillary contractions of the quadriceps extensor muscle, after a strong faradic current has been passed through it; when the current ceases, instead of the muscle remaining quiet, these fibrillary contractions succeed each other in rapid succession, like a waving field of grain. This peculiar condition, which is most frequently seen in the quadriceps, the author ventures to call the "traumatic reaction." This condition may also be produced by fatigue and cooling the muscle.

Pressure upon painful points caused an increase in the frequency of the pulse, which was smaller and irregular. This symptom was found in non-traumatic forms of neuralgia.

Quantitative diminution of the galvanic excitability of the nerves was a frequent symptom. Erb's normal electrode was used, and the ulnar and peroneal nerves were most frequently examined. It was especially difficult, in the case of the latter nerve, to get the cathodal tetanus (Ka. S. Fe.), it sometimes requiring 20 milliampères, or it could not be obtained at all, while in health it is induced by from 6 to 8 milliampères.

Value can only be given to sensory changes by reason of their subjective character, when frequently made and by exactly the same methods.

HYPNOTIC SUGGESTION.—This therapeutic procedure seems to be constantly gaining ground in France and Germany, though it has as yet attracted little attention in this country. SCHRENCK-NOTZING (*Internationale Klinische Rundschau*) has recently noted a cure of sexual perversion (*Konträrer Sexualempfindung*) by suggestion. The patient, 28 years of age, never experienced sexual excitement with females, but was only gratified by mutual masturbation with the male sex. From January 22 to May, 1889, he received forty-five treatments by suggestion while in the hypnotic state. The result was a complete change in the abnormal sexual appetite, and a few months later the patient was happily married.

LACTIC ACID IN THE URINE.—HEUSS (*Arch. f. ex. Pathol. u. Pharmakol.*) has recently made some observations on the presence of this substance in normal urine. A large quantity of urine was employed, in one case 41, in another 42, and a third 56 litres respectively. In none was a trace of lactic acid found, these conclusions negativing those of Lehman, Langendorff and Mommsen. Very great interest attaches to the observations of Colasanti and Moscatelli, that lactic acid is found in the urine of persons after prolonged and exhausting muscular exercise; for if it is true that this substance is formed in the tissues in the oxidation of carbo-hydrates, it is possible that a small quantity might escape through the kidneys. Heuss does not consider that the single test made was conclusive evidence of the presence of lactic acid, as the rhombic prisms described by Colasanti and Moscatelli may be obtained from urine which contains no lactic acid by the addition of oxide of zinc.

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SATURDAY, JUNE 21, 1890.

THE PHYSICIAN'S RETURN FOR THE INSANE, FEEBLE-MINDED, DEAF, BLIND AND SICK, FOR THE ELEVENTH CENSUS OF THE UNITED STATES.

The circular issued on the 15th of May, from the Census Office under the authority of the Department of the Interior and over the signature of "JOHN S. BILLINGS, Surgeon U. S. A., In Charge of Vital Statistics and Statistics of Special Classes," has been the subject of considerable comment by the public press, the consensus of opinion among the physicians interviewed all over the country being represented as adverse to the proposed method of obtaining statistics of the physically and mentally afflicted classes of the community. Medical journals have generally abstained from more than casual reference to the matter, since while they are all agreed in believing the information sought to be of the most vital importance to the health statistics of the country, the manner of obtaining it contemplated by the circular, is undoubtedly open to serious objection. The circular states, that "each census enumerator, in making a list of the living population, is expected to give the name, age, sex, color, occupation, and whether the person is insane, feeble-minded or idiotic, blind, deaf, dumb, crippled, maimed, lame, deformed, or whether so affected with acute or chronic disease, or the results of injury as to be unable to pursue his usual business," but admits that for various reasons "the reports as to the kind of sickness affecting persons will be very unsatisfactory as derived from enumerator's returns," to remedy which the request is addressed to every physician in the United States to fill out lists of names "for the persons of your acquaintance or in whose families you practice, giving the names, etc., of those you know to be insane, feeble-minded or idiotic, blind, deaf and dumb, sick, crippled, maimed or deformed," the inferred objections to such reports being met by the assurance in black letter that "all information which you furnish on these schedules will be considered and treated as strictly confidential. No names will be published and only the total figures will be given to the press," but how this was to be accomplished is not clear in view of the statement on the preceding page of the circular, that "You need have no fear of duplication, by returning names, which other physicians may return, because all returns from the same locality will be carefully compared (with the lists furnished by the enumerators), and all duplicate returns put aside." How can anything be "strictly confidential," which is exposed to the critical scrutiny of a multitude of census enumerators, for it will require a multitude to do this work. These employés probably have the usual human failings, and one can imagine what use census enumerator Jones would make of the discovery of the fact that his neighbor Smith's child was suffering from congenital syphilis, nor doubt that census enumerator Brown would whisper to Mrs. Brown that Mrs. Green's baby had gonorrhœal ophthalmia, and that the Black's daughter had a concealed deformity, for the "Special Instructions for filling Schedule" prescribe that the reporter shall, "in column 39 state, if deformed, the nature of the deformity and the part or limb affected; if sick, the nature of the disease; if suffering from the effects of an injury, the nature of the injury," and returns of disease to be of any statistical value whatever must be absolutely correct. It will not do to conceal venereal affections under rheumatic or cutaneous cloaks, or to attribute chronic alcoholism and its sequelæ to dyspepsia. Data of this sort are worse than none at all.

Vital statisticians are all alive to the fact of the insufficiency of mere mortality records as indices of the salubrity of localities or of the sanitary condition of communities. Exact returns of actual disease prevalence are absolutely neces-

sary to this end, and these can only be supplied by physicians, but this must be without requiring the violations of Article I of the Code of Medical Ethics, which enjoins among the "Duties of Physicians to their Patients" that "secrecy and delicacy, when required by peculiar circumstances, should be strictly observed. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice." It is to the credit of the profession, that this obligation has been held inviolate since the days of Hippocrates, so that it can hardly be expected now that any considerable number can look with favor upon the invitation on page 4 of the blank to communicate the names, residences, age, sex, color of all persons who are so sick on June 1, 1890, as to be unable to attend to ordinary duties, with the "disease or injury," and the "names of householder, of whose family sick person is a member," even in a strictly confidential manner to a lot of unprofessional and wholly irresponsible census enumerators.

It would be a most desirable sanitary lesson could the myriads of victims of alcoholic intemperance and the greater myriad of those of venereal contamination be exhibited in exact numbers, but how many physicians are there, who would deliberately place on paper the name, sex, color, age, place of residence (street and number), of all the persons of their acquaintance, or in whose families they practice whom they know to be congenitally afflicted, maimed or deformed, or to be sick, crippled or otherwise physically unfortunate? It is very certain that the census of 1890 will not contain this information.

A SWEDISH LEPER SENT HOME.—The Massachusetts State Board of Lunacy and Charities has formally ordered the return to Europe of a leprous Swedish woman, who arrived in Boston on April 28.

THE MUTUAL RELATIONS OF GENERAL AND PROFESSIONAL EDUCATION.

Are they as well adjusted as they might be? Is the average time required for our youth to pass the primary, the grammar or preparatory school and the college of liberal arts, and receive the degree of B.A., so great that the addition of three or four years required for acquiring a profession makes it unreasonably late before they can commence earning for themselves? The affirmative of this last question has been maintained by many, and during the last few years it has received the serious attention of some of our most eminent educators. Thus, DR. WM. PEPPER, Provost of the University of Pennsylvania, in his address before the College Association of the Middle States and of Maryland, in November, 1889, says: "As our society is at present constituted, it is essential for the vast majority of young men to get at profitable work by the time they are twenty-three or twenty-four years of age. It appears clear that the work of the college of arts must for the most part be done, if done at all, before the age of twenty-one years," that from two to four years may be left available for professional study. Similar views have been expressed by those connected with both Harvard and Columbia colleges, and it is claimed that the average age of the graduates from both the colleges of liberal arts and those of medicine, law and theology in this country is considerably greater than the age indicated by Dr. Pepper as most desirable. In regard to the causes of this evil, the address of Dr. Pepper says: "Doubtless there are many reasons which go to explain this anomalous state of things, but among them it counts for a great deal that the progressive advances in the requirements for admission to college have caused a corresponding increase in the average age at matriculation." It further says: "We are not educating in our colleges, despite the great increase in their number and wealth and advantages, and the increased ease with which free tuition can be secured, any larger, if indeed as large, a proportion of our young men as we did ten years ago."

Three methods have been suggested for remedying the evils complained of, namely: such a reorganization of the curriculum of the preparatory schools as will enable the average student to enter college at the age of 16 or 17; or such im-

proved modes of preparation that he may be able to reach the present standard of qualification for the degree of B.A. in three years after entering college instead of four; or such readjustment of the studies of the senior year in college that it may count as the first year of professional study.

The adoption of the second method for reducing the course in college from four to three years, is said to be under favorable consideration by the authorities of Harvard, while the third method is regarded with more favor by those of Columbia. But while some of our most eminent educators and the authorities of our oldest colleges and universities are thus devising ways and means for enabling a larger proportion of young men to graduate from colleges of liberal arts in time to acquire a professional education before they exceed the age of 23 or 24 years, many in the medical profession and some of the State Boards of Medical Examiners are earnestly advocating an extension of the period of medical studies from three years as at present to four, which, if adopted, would fairly neutralize the saving in time proposed by the general educators. Before adopting any of these measures the whole subject of education, from the primary or public school through the universities, including the professional schools, should be carefully reviewed in direct connection with the conditions and wants of modern society, more especially as it exists in this country.

Such a review would probably show that it is not so much the high standard of requirements for entering college, nor the length of the college course for reaching the degree of Bachelor of Arts, that prevents a larger proportion of young men from graduating, as it is the nature of the chief studies embraced and the paucity of other studies of more practical interest and value, both to the individual and to the State.

The subject is of very great importance, especially in its relations to the medical profession, and its discussion will be resumed next week.

TREATMENT OF POST-PARTUM HÆMORRHAGE.

Prof. Otto Küstner has recently added an interesting and complete study of this subject to the literature of obstetrics (*Deutsche Med. Wochenschr.*, 1, 1890). He divides hæmorrhages into two classes: first, those caused by rupture of the genital tract; second, those from relaxation of the uterus. Among the remedies recommended for this latter condition are ergot stimulation by heat, and massage of the uterus. If these do not succeed, the iodoform gauze tamponade of the uterus is recommended. This last method, in his judgment, not only excites uterine contraction, but also exerts direct pressure upon the bleeding part. In cases where the source of the blood can not be at once made out the entire genital tract should be tamponed.

We may well ask, in the light of this communication, what, if anything, has been added to the treatment of post-partum hæmorrhage? With the single exception of *tamponement*, after the method of Dührssen, there is scarcely anything that may not be found in any elementary work on obstetrics. Conspicuous by its absence is the quickest, most certain and efficient means of securing uterine contraction; we refer to the faradic current.

In these days, when the antiseptic craze in midwifery is at its height, and the medical journals are filled with articles that will almost convict a physician of malpractice who is so unfortunate as to have a death occur from child-bed fever, we may ask our obstetricians why post-partum hæmorrhage from inertia of the uterus is ever allowed to take place, when a means is at hand that will contract the uterus in a dead body. We trust that we may not be considered impertinent if we doubt the necessity of stuffing the uterus with iodoform gauze, when uncertain of our diagnosis; if a few rigorous contractions of the uterus would at once settle the question whether the hæmorrhage was due to inertia or rupture.

It may be argued that an electric battery is a complicated piece of apparatus, liable to get out of order, and too bulky for convenient transportation. All these objections have been met by the ingenuity of our manufacturers, who have devised instruments of surprisingly small compass, from which currents of great intensity may be obtained. These batteries are free from corrosive liquids, their action is certain, and they may be charged and put in working order in a few seconds. Every obstetric bag should be supplied with one of these pocket batteries, for with it severe hæmorrhage from uterine inertia is a practical impossibility.

EDITORIAL NOTES.

THE attendance at the forthcoming International Congress at Berlin, this summer, is estimated to exceed 5,000, and special arrangements will be made in consequence.

THE ELECTRICAL EXECUTION LAW.—The law in New York State substituting electricity for hanging as the means of execution, has at last been passed upon by the Court of Appeals, and considered to be constitutional, after a struggle lasting nearly a year. The court virtually declares that killing by electricity is more humane than that by hanging, and this declaration is based upon strong and repeated testimony that the application of electricity in the manner contemplated by the statute must result in instantaneous and, therefore, painless death.

A SANITARY ORGANIZATION OF WOMEN.—The women of Brooklyn have united to form a Ladies' Health Protective Association, similar to the one which has for years been so useful in New York City. The lines of its work will be in the direction of such nuisances as offensive pursuits, uncared-for tenement houses, and filthy streets. The wives of physicians form a considerable proportion of the organization.

MEDICAL FACULTY OF BUENOS AYRES.—The number of students in the medical faculty of the University of Buenos Ayres during 1889 was 430, being an increase of 8 as compared with the preceding year. Of these, 66 were foreigners and 46 were women. Of the latter, one went through the ordinary curriculum of a fourth year's student, and the others attended the obstetric classes. Between March 1, 1889, and the corresponding date in 1890, forty-three degrees of Doctor of Medicine were conferred. The faculty has asked the Government for a grant of 60,000 pesos (about $60,000) for the erection of new buildings.

HYPNOTISM BY TELEGRAM.—Dr. Milne Bramwell, of Goole, Yorkshire, is reported in *The Lancet*, April 5, to have tested the anæsthetic uses of "suggestion" in a considerable number of cases. He has recently, March 28, given a demonstration of the *modus operandi* of inducing anæsthetic sleep before a large representation, sixty in number, of the medical fraternity of Leeds. Among those present were Mr. Pridgin Teale and Dr. Braithwaite. With one exception the patients who were thus experimented with and upon whom operations, minor in character, were performed, all reported that there was no consciousness of pain, and in some cases they reported that there was no soreness in the parts afterwards, or, at least, for some little time after the operation. Dr. Bramwell showed that in some cases where hypnotism had been formerly practiced by him, the influence could be reinduced, in his absence, by another person by the reading of a letter from him to the hypnotic subject; this subject was thus put to sleep as a means of relief from neuralgic pain. Dr. Bramwell went further and tried the effect of a telegram upon a person formerly hypnotized, and that also succeeded in like manner and for a like object. One of the patients was exhibited as having been cured of alcoholic addiction by "suggestion," and in the presence of the invited company refused to swallow a particular glass of water which had been made to appear to him, while hypnotized, to be a drink containing alcohol.

IN MEMORY OF DR. BYFORD.—The one hundred and sixth meeting of the Chicago Gynecological Society was held on the 13th inst. at the Grand Pacific, its proceedings being entirely devoted to the memory of the late Dr. William H. Byford, one of the founders of the Society, and its first deceased Fellow. An eloquent tribute was pronounced by Dr. H. P. Merriman. Other papers on the life and services of Dr. Byford were read by Dr. N. S. Davis, Dr. Hosmer A. Johnson, Dr. Nelson, Dr. Fitch, Dr. Norman Bridge, Dr. Waxham, and Dr. Philip Adolphus.

GERMAN MEDICAL STUDENTS.—According to official statistics, the following were the numbers of medical students attending the various German universities during the winter session 1889–90: Münich heads the list with 1,422, Berlin comes next with 1,373, then come in order Würzburg with 998, Leipzig with 944, Griefswald with 377, Breslau with 358, Strassburg with 353, Bonn with 343, Erlangen with 340, Freiburg with 327, Halle and Heidelberg each with 284, Königsberg with 258, Kiel with 241, Marburg with 239, Tübingen with 232, Jena with 216, Göttingen with 211, Giessen with 158, and Rostock with 145.

HONORARIUM FOR THE MEDICAL STAFF IN CERTAIN ENGLISH INSTITUTIONS.—*The Press*

and Circular notes the fact that the medical profession of the city of Liverpool are virtually a unit in declaring that the medical attendants at all non-medical charitable institutions should receive "some pecuniary recognition of their services." The medical officer is ordinarily and throughout the whole country the only unpaid official at the philanthropic institutions of the class referred to, which embraces those provided for the blind, the deaf and dumb, the fatherless and orphans, fallen women, the aged, and many others that are sought out by the charities that soothe, and lead, and bless. The action taken by the Liverpool profession does not imply a large salary or even adequate remuneration, but merely "some recognition;" and this, the *Press and Circular* says, is right and just, being simply an admonition to the managers of these noble charities to "be just to your medical officers as well as generous to the inmates" of those various retreats. It is no answer, it says further, to attempt to draw a parallel between them and the hospitals and recognized medical charities, for the reason that the two classes are essentially distinct and dissimilar, and the duties of unpaid staff too often involve a gratuitous attendance on the paid staff, which cannot be justified. "The day has gone by" in England "when medical men are eager to seek and maintain all honorary appointments. The time is not far distant when such appointments must either have some honorarium attached to them, or go a-begging." These views may sound strangely in our ears, but they are so positively expressed as to set men thinking whether some of the many demands made in this latitude for gratuitous medical services may not be an imposition on good nature and long usage. The unrequited services of medicine are generally admitted to exceed in volume and value those of divinity and law combined, but that is no argument for their unquestioning extension to fields that can be defined as non-medical and remote.

A National Laboratory.—A bill is before Congress to establish a National Laboratory. Five hundred and fifty thousand dollars are asked to start the enterprise. The Marine-Hospital Service, and the Secretary of the Board of Agriculture, are to be the controlling agents of the Government in the conduct of this enterprise.

Cholera Spreading in Southern Spain.—There were nine deaths in Puebla de Rugate last Saturday. Seven fresh cases are reported. Two-thirds of the inhabitants have fled from the town. The first cases appeared a month ago, the victims all being residents of a street which had been opened up for paving. Seven deaths have occurred at Montichelso, a village near Puebla de Rugate, and seven fresh cases are reported there. A later despatch says that the doctors at Puebla de Rugat are greatly overworked, and the authorities have telegraphed to Valencia asking that physicians be sent from that city to aid them. The supply of drugs is running short, and the town officials have also telegraphed for a fresh supply from Valencia. The total number of cases thus far reported is ninety-one. One of the persons who fled from the town for safety has died from the disease at Albaida. Dr. Candela, who is an expert, declares that the disease at Puebla de Rugat is true Asiatic cholera.

The Government announced in the Senate last Monday that it had not been proved that the disease now prevailing at Puebla de Rugat was Asiatic cholera, and there was no cause for alarm. It was further stated that the Board of Health had sent a deputation to Valencia, and had taken sanitary measures to prevent the spread of the disease.

Dr. A. B. Lyman has been elected to fill the newly created Chair of History of Medicine in the University School of Medicine at Baltimore.

In accordance with resolutions passed by the Brussels Academy of Medicine, the Belgian Government is about to forbid public *séances* of hypnotism. All who, "outside the lawful exercise of the art of healing," hypnotize girls aged less than 18 years or persons in a demented state, will be punished with fines and imprisonment.

Between Rome and Naples the Red Cross of Italy has been running a hospital train composed of ten carriages—two for the directing *personnel*, one for the registrar and for wounded officers, two for fourteen patients (sick or wounded of each troop), one for medicines and alimentary stores, one for the culinary service, one for the assisting *personnel*, one as an escort carriage, and one as a luggage wagon. Inspected at various points of the line by medical experts, it is reported to have fulfilled its functions admirably.

TOPICS OF THE WEEK.

DR. EMIN PASHA.

Emin Pasha is a man of interest to the medical profession. Belonging to that profession by education, and a keen observer and lover of science, his experiences in Central Africa, and his character, are matters claiming our attention, especially at the present moment.

A collection of his journals and letters up to the time he was shut up in the Soudan, were made and published in Germany, in 1888, by his friends Professor Schweinfurth, Professor Ratzel, Dr. Felkin, and Dr. Hartlaub. The book was translated by Mrs. Felkin, and published in London two years ago.[1] Emin Pasha was then counted almost among the dead, and his work and motives were no longer subjects of inquiry and discussion. The book excited no interest, and was quickly forgotten. Emin Pasha has since been found and relieved, and all Europe rings most justly with the renown of his dauntless rescuer, Stanley. Emin, after showing some hesitation, has resolved to return to the country from which he had been just rescued by such superhuman efforts. What manner of man is this? The book before us tells us something.

Emin Pasha was born at Oppeln, in the Prussian province of Silesia, in 1840. His real name is Eduard Schnitzer. He began to study medicine in 1858 at the Breslau University, and completed his medical education in Berlin, where he graduated in 1864. Being animated by a strong desire to travel he left Berlin immediately after graduating, and went to Turkey, and joined the staff of Hakki Pasha, whom he accompanied on his official journeys through Armenia, Spain, and Arabia. He adopted the name of Emin, which means "the faithful one," so that his Frankish name should not interfere with his identification with the interests of the people he wished to serve.

In 1875 he returned home to visit his family, but suddenly the desire to travel seized him again, and, taking the nearest route to Egypt, he entered the Egyptian service as Dr. Emin Effendi. He was ordered to join the Governor-General of the Soudan at Khartoum, and from there he was sent to act as chief medical officer in the Equatorial Province, of which Gordon Pasha was then Governor. In 1878, after Gordon had been made Governor-General of the whole Soudan, he appointed Emin, of whom he had a very high opinion, to his own former post as governor of the Equatorial Province.

Between Gordon's term of government and Emin's appointment there had been a lapse of time, during which disorder had grown apace. Emin's task was full of difficulty, but, with surprising patience and determination, he became master of the situation, though always alone, unsupported by any other European. He restored order, banished the slave dealers from the province, and released the slaves, and managed the resources of the country so well that he turned a deficit of £32,000 a year into a revenue of £12,000 for the Egyptian Government. His journals are full of accounts of long weary journeys through dismal swamps, in torrents of rain, and in the burning sun to distant stations on official duties.

Medical work was, however, not forgotten, and at Lado, where was the chief hospital of the province, he might be seen early every morning going round its wards, and prescribing for the patients.

Scientific researches into the botany, zoology, and ornithology of the province were prosecuted unceasingly, and collections made, though he never allowed his pleasure in scientific observation to draw him away from his official duties. He held in high estimation the mission of a doctor. "A sick man," he writes, "is no subject, but a feeling and suffering being, whose sensibility is greatly heightened. Be to your patient in the first place friend, then doctor. Our mission is a high and holy one, and the murmured thanks of a poor man are of far higher value than a few guineas, and the knowledge that one has saved a sick child for its mother is a far more beautiful reward than can ever follow a brilliant but risky operation."

The Mahdi insurrection and the subsequent evacuation of the Soudan threw the Equatorial Province into a state of disruption. One by one Emin had to abandon his more northerly stations, and in the last letter in the book, dated April, 1887, he describes how he and his Soudanese troops were holding on at Wadelai and looking for the arrival of the relief expedition promised from England; but even if relieved Emin declares in emphatic words his deliberate intention not to leave his people and the work begun, to which so many years of his life had been devoted.

"If the people of Great Britain think," he says, "that as soon as Stanley or Thomson comes I shall return with them, they greatly err. I have passed twelve years of my life here, and would it be right of me to desert my post as soon as the opportunity for escape presented itself? I shall remain with my people until I see perfectly clearly that both their future and the future of our country is safe. The work Gordon paid for with his blood I will strive to carry on, if not with his energy and genius, still according to his intentions and in his spirit." And he repeats: "I should like here again to mention that if a relief expedition comes to us I will on no account leave my people. We have passed through troublesome times together, and I consider it would be a shameful act on my part were I to desert them."

These words do much to explain Emin Pasha's recent action in returning after his rescue, which has been so much discussed. They are typical of the character of the man. Quietly determined to carry on his work, he will be faithful unto death to the mission he has undertaken. He believes in the Soudanese and in their possible development, and he is anxious to deliver them alike from the slave trader, the Egyptian Government, and commercial explorers He has offered his services now to the German Government, and it will be interesting to watch his future career and to see what he accomplishes.

His friends speak of Emin with reverential affection as a man of surprising devotion and unselfishness, and, though of encyclopædic knowledge in zoology, botany and languages, of extreme modesty and diffidence.

[1] "Emin Pasha in Central Africa." A Collection of his Letters and Journals. London: Philip and Son. 1888.

He won the confidence of natives chiefly by patience and justice, and by his complete knowledge of, and sympathy with, their modes of thought, customs and prejudices. Despising nobody, least of all the naked negro, and hating none but the ruthless slave trader, Emin Pasha is eminently fitted for the work to which he is devoted, and is, as shown by his letters and journals published by his friend, Dr. Felkin, a man of whom the medical profession may well be proud.—*Brit. Med. Jour.*

PUBLIC EXHIBITIONS OF HYPNOTISM

Though but lately introduced to public notice, hypnotism has for many years attracted a share of professional attention. A certain interest doubtless attaches to the subject, but this is of a serious rather than an amusing kind, a fact which is not so fully recognized as it should be. It is of some consequence from a scientific standpoint, for example, to determine the psychical forces concerned in producing this condition. It is, further, somewhat important practically to decide how far the artificial slumber may be utilized for therapeutic purposes, though its occasional success when thus employed will probably never compensate for the time and effort often vainly spent in striving after this result. Up to this point, however, we can at least allow that serious honesty of purpose on the part of those concerned affords some show of justification for the peculiar nervous change effected by them. When we come to such novelties of recreation as the hypnotic séance the case is quite different. There is at any time an element of danger involved in a practice which numbs the senses and energies of the nervous system as hypnotism does. The creation of what amounts to cataleptic torpor is itself morbid. It implies, moreover, either a previous abnormal sensitiveness in the nervous centres of the medium acted on, or the employment of an unusual and powerful agent to control those of ordinary stability. Either way the process and its effects are unwholesome, needless and undesirable. Another consideration is that of after-consequences. As regards these, no definite statistics, indeed, are obtainable; but common experience teaches that, the will mastered, and that not once but often, by another, is less potent for its individual work in life than it was before. What right, then, we would ask, has any one to subtract thus much from even a unit of human usefulness? The privilege based on reason, and claimed by the genuine scientific observer, we have already referred to. That of the mere performing conjuror of the entertainment-room neither fashion nor money gain will justify. Such exhibitions as his should be discouraged by all rational persons, and in cases where consent has been actually or virtually forced, should be punishable by law.—*Lancet.*

DEATH OF FRIEDRICH KUCHENMEISTER.

Friedrich Küchenmeister died at Dresden on the 13th ult., aged seventy. In 1852 he proved by experiments that the tapeworm develops out of the cysticercus cellulosus, and that the latter is traceable to the tapeworm's brood. He was one of the first advocates of the official inspection of cattle, meat and meat markets. He investigated the propagation and treatment of cholera and the local frequency of consumption in Saxony, and wrote on these subjects. For some time he edited a periodical of his own, entitled *Periodical of Epidemiology*. He was one of the most zealous advocates of cremation. Two writings of his later years on Luther's last illness and on the date of Luther's world-famed hymn, "Ein fester Burg ist unser Gott," bear interesting testimony to the width of his sympathies. He was a native of Buchheim in Saxony, studied in Leipsic and Prague, practiced at Zittau, and subsequently went in 1850 to Dresden, where he spent the rest of his life.

The *Berliner klinische Wochenschrift* of May 5 gives some interesting particulars about him. Though best known for his researches on tænia mediocanellato and other parasites, he was a practical physician with an unusual range of scientific interest. He was one of the first of his countrymen to understand the importance of ovariotomy, and the first operation of that kind performed in Germany was done at Dresden at his instigation by an assistant of Sir Spencer Wells. To Küchenmeister is due the introduction of the treatment of diphtheria by limewater, which has been generally adopted throughout Germany. He also displayed considerable ingenuity in inventing and modifying surgical instruments; perhaps the best known of his titles to fame in this line is the apparatus for plugging the nostrils in epistaxis, known as the *Rhineurynter*—a name which must have cost almost as much trouble to invent as the thing it was meant to designate. During the last fifteen years of his life Küchenmeister came much before the German public as an ardent apostle of cremation, and in accordance with his wish, his own body was cremated at Gotha.—*Brit. Med. Jour.*

LEPROSY EXCLUDED AT THE BOSTON QUARANTINE.

The quarantine authorities at Boston Harbor have intercepted the importation of a case of leprosy in the person of a woman from Sweden. After the true nature of the disease had been clearly made out the officials not only refused a permit to land, but required the Cunard Company to return the leper to her own country. This was done on May 10. It has now been learned that the diagnosis of leprosy was confirmed by the medical officials at Liverpool upon the arrival of the outcast at that port.—*N. Y. Medical Journal.*

PROFESSOR VIRCHOW.

Professor Virchow lately paid a visit to his friend Schliemann at Hissarlik, to see his new excavations there, and took advantage of the opportunity to visit Constantinople. He was invited by a deputation of the Medical Society there to attend one of its meetings, and complied with the invitation. The President, Dr. Stekulis, delivered a speech in which he celebrated Virchow's services to science, which had crowned the edifice of the modern anatomical pathology founded by Morgagni. Virchow thanked the speaker, described the impressions which the developing intellectual life of the East had made upon him, gave an account of the present state of biology and, in compliance with a request, described the newest methods of treating leprous diseases. The meeting afterwards assumed a more social character.—*Lancet.*

PRACTICAL NOTES.

THE ORIGIN OF MYOPIA.

Dr. M. Kirchner[1] has made a very comprehensive and interesting contribution to the study of the causes of myopia, together with some valuable suggestions as to its prophylaxis. In 1812 James Wasz made a number of observations, which did not at the time lead to much further investigation. H. Cohen brought the subject into prominence again when he presented his inquiries into the relations between school life and myopia.

Briefly, the salient points in Kirchner's essay are the following: 1. Nationality has an influence, though a slight one, in the production of myopia, as shown by contrasting Jews with other people. The complexion, whether fair or dark, also seems to have some influence.

2. The shape of the cranial bones is also a factor, but how far is not yet determined. Deep orbits and a short face are very frequent in near-sighted persons, but often the same mould of face is found without myopia.

3. Heredity is an important factor. Children are most liable to be near-sighted when both parents have been similarly affected, less liable when only the mother; and least when only the father is thus affected. Boys of myopic parentage are twice, and girls four times as strongly inclined to myopia as the offspring of non-myopic parents.

4. There is but little difference between the tendency of boys and girls to become near-sighted. If any exist, it will be found that under the same conditions more girls than boys will become affected.

5. Occupation has the greatest influence in the production of myopia, as especially marked in those occupations which demand frequent and continuous accommodation of the eye with convergence of the visual axes.

6. Needlework at an early age, unsuitable seats, insufficient light and means of teaching, which make too great demands upon the eye, such as dark slates, poor paper, small type, etc., all possess a most harmful influence.

The following is recommended by way of prophylaxis:

Schools should be well lighted; this should be so arranged that in gloomy weather the darkest part of a room should receive light the equivalent of ten candle power. The window surface of a room should bear the proportion to its floor surface of at least 1 to 5. The interruptions to light should be few, for this reason the panes of glass should be large, and the frames should be of iron. School buildings should be somewhat isolated, not surrounded by other buildings, trees, etc., which lessen the amount of light.

2. The seats should be adapted to the sizes of the pupils, there being at least three sizes in each room. All the pupils should be measured twice a year and seated accordingly.

3. On entering school each pupil's eyes should be examined by a physician and the result recorded. All the pupils should be examined at least once a year, and should any show signs of myopia they should be carefully guarded against further predisposing causes in the assignment of seats, and in the apportioning of exercises, etc. Glasses should not be worn unless by direction of a physician; neither should their use be forbidden except by the same authority.

4. Test letters should be displayed in each room in a suitable place; if on dark days the vision of any of the pupils should be found wanting, it would be better to temporarily substitute oral instruction for exercises in reading or writing.

5. As little as possible of the school work should be done at home. Here, also, each child should have a chair adapted to its size. The hours for study should be arranged by the teacher.

6. Black slates should not be used, but in their stead white slates or paper. In text-books and in writing books white paper and black ink should be insisted upon.

These demands are clearly put, and, further, they can be easily complied with. The most difficult thing would be to regulate the amount of work at home, as well as seats adapted to the size of the children. The latter condition is not only of the highest importance in its relations to the production of myopia, but it plays a prominent part in the consideration of spinal curvature.—Editorial, *Weekly Medical Review.*

[1] Deutsch. Med. Zeitsch. f. Hyg.

CHLOROFORM WATER IN CROUP.

Dr. Bashere has lately obtained excellent results (*Med. Rec.*) from chloroform water in the treatment of false croup, and regards it as superior to chloral in this affection, in that it is not so dangerous, and is eliminated in part by the lungs. Of course its action is local, and its value, probably, due to the sedative effect upon the sensory filaments of the superior laryngeal nerve. He uses a solution consisting of 5 to 10 minims of chloroform to an ounce of water, to which is added a little glycerine to aid the solubility of the chloroform. A teaspoonful of this is given every half hour during an attack, and if there is any dyspnœa the following day, a teaspoonful is given every two hours, increased in frequency to every hour during the evening. This method of treatment is especially applicable to those cases in which the dyspnœa and cough continue during the day.—*Canada Lancet.*

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Alimentation in the Treatment of Phthisis—How to cure Obesity—How to render Corrosive Sublimate almost Inoffensive—Blenorrhagic Arthropathy.

In the *Journal de la Santé* Dr. Solis-Cohen has published an interesting article on alimentation in the treatment of pulmonary phthisis. The author recommends that the precept of Niemeyer should be followed, in that tuberculosis is the danger of phthisis. Once the malady is recognized we should combat the troubles of nutrition, which favored and probably preceded the invasion of the tissues by the bacillus. Consumption in tuberculous subjects is a malady of nutrition. Its true cause is unknown, although we know that heredity, hygienic conditions, etc., play a great rôle in its development. The author considers the microbicide treatment of pulmonary tuberculosis as secondary and symptomatic. Considering that defective nutrition is the true cause of the development of tuberculosis, he says that a rational treatment should consist in hygienic and medical measures directed against the failure of nutrition. Superalimentation is the best means for attaining this object. "Gavage," or forced feeding, should be reserved for exceptional cases. Excepting during the night, when the patient is asleep, he must not be allowed to pass more than three hours without giving him some nourishment. Even during the night, if the patient does not sleep, he should have some wine with liquid peptones. Different sorts of meat, particularly beef, milk, fish, eggs, and vegetables of all sorts, should form the basis of his nourishment, to which may be added fatty substances, under the form of cream, butter and cod liver oil. Alcohol in large quantities, either with milk, glycerine, or cod liver oil, should be administered. In the evening, at bed-time, the patient will take some milk punch. In the morning, on an empty stomach, he should drink warm water; or, if necessary, lavage or washing out of the stomach should be practiced to prepare the digestive tube for the absorption and the digestion of aliments. Gavage should be employed, as already stated, only in exceptional cases, and be preceded by washing out of the stomach with alkaline or chloroformed water. At the same time with superalimentation an air cure should be adopted. Living in the open air, horse riding and respiratory gymnastics suffice if the patient is not too debilitated. Inhalations of compressed air, with or without expirations in a medium where the air is rarefied. These inhalations will be found useful to children predisposed to tuberculosis.

In the same journal is announced the discovery of a means, as simple as it is strange, for curing obesity, which is attributed to a medical officer in the army. Thanks to this means, a Colonel who was threatened to be obliged to retire from the army, as he was so heavy that it required two men to lift him into his saddle, became thin in a few weeks, and to such an extent that he had to take the means to recover, in a measure, what he had lost. It was to his doctor that he was indebted to have become a General. The means consisted simply in never eating more than one dish at each meal, no matter what that dish may be, and a person may consume as much as the stomach will bear, and satisfy the appetite without the least reserve. Nevertheless, nothing but the one dish should be taken; no condiments, nor soups, nor supplementary desserts should be allowed. This system was recommended by the author of the note to a lady who was slightly obese, and who put it into practice with the best results. The lady observed that she suffered no inconvenience whatever from this diet, and the result obtained by the medical officer may be well understood, as she found by her own experience that the partaking of only one dish, whether it be meat, fish or vegetables, brought on a sense of satiety much sooner than if she had partaken of a variety of dishes, whence the effect of relative abstinence.

According to the *Moniteur Thérapeutique* Prof. Scabzi, of the University of Rome, had undertaken certain experiments in his laboratory, the results of which permitted him to indicate a very simple means for rendering corrosive sublimate almost inoffensive. This means consists in always employing it in minimum doses insufficient in themselves to produce an antiseptic action, and to take the precaution previously to raise the solution of this salt to a temperature of from 40° to 45° centigrade. By this simple artifice the advantages and the antiseptic properties of the sublimate are preserved, without having to fear the dangers of strong doses, with their caustic and toxic action. M. Scabzi had ascertained that a hot solution of the sublimate, of ten thousandth or of twenty thousandth, preserved urine from putrefaction, and that the juice of meat was prevented undergoing any alteration by means of a hot solution of the same salt of one hundred thousandth. These feeble and hot solutions gave him excellent resnlts in the dressing of wounds. According to the *Journal d'Hygiene* of the 31st of October last, these facts had already been established by M. E. Saint-Hilaire, who had undertaken analogous experiments prior to those of M. Scabzi, on the counsel of Prof. Charles Richet.

At the last meeting of the Société Française de Dermatologie et de Syphiligraphie a discussion took place on blenorrhagic arthropathy, at which Dr. Mauriac stated that he has almost given up the internal treatment of blenorrhagic rheumatism, as he found that the agents employed

against true rheumatism are without action on blenorrhagic rheumatism, particularly the salicylate of soda. He hardly gives anything else than the iodide of potassium in the cases where there is a gouty tendency. Dr. Fournier observed that notwithstanding numerous researches he had never been able to establish characters special to blenorrhagic discharges which accompany rheumatism. He hoped, in treating the urethral discharge, to produce an amelioration in the articular symptoms, but was always disappointed, for even after the blenorrhagia was cured the rheumatism continued its course. A. B.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Strychnine as a Remedy in Chronic Alcoholism and Dipsomania—Volunteer Nurses for Lepers—Sir Morell Mackenzie on "The Voice"—Amenorrhœa due to Mental Shock and with Mental Depression—A Case of Raynaud's Disease.

The most hopelessly addicted to alcoholic beverages would seem to have found a friend in a certain medical man, who has recently contributed an article on alcoholism, in which he describes seven cases of inebriety treated by hypodermic injections of strychnine. He states that in cases of chronic alcoholism and of dipsomania he has found strychnine a very valuable remedy. Not only are attacks cured, but the desire for drink ceases to exist. Even cases of delirium tremens yielded in a large measure to the influences of the method adopted. The treatment, however, would seem to be somewhat tedious, requiring to be carried out systematically and most frequently for long periods of time. In some exceptional instances doses of one-fifteenth of a grain were prescribed, though in general doses of half that amount were given; and while under the treatment in question patients have abstained from all spirituous liquors of their own free will.

A Roman Catholic lady who is a highly trained nurse, and several co-religionist friends, have offered their services to the Government in nursing the lepers at the new hospital to be built on Robben Island. They are somewhat afraid that their noble offer may be refused on religious grounds, but they point out the advantages that the hospital would derive from a disciplined band of women asking only the barest necessities and devoted for their lives to the work. Should their proposal be entertained, they are ready at once to take up a course of special training in the nursing of leprosy. An English lady—Miss Marsden—has just received imperial permission to make special investigations into the extent and condition of the disease in Russia.

Before an overcrowded audience Sir Morell Mackenzie recently delivered a lecture on "The Voice," in the course of which he gave some instructive advice to actors, singers, elocutionists, and others. A very important part with regard to the governing of the voice had reference to what he described as clavicular respiration. This consisted in the expansion and contraction of the clavicles, and many well-known singers employed this clavicular voice. In this connection he mentioned a story with regard to the celebrated singer Rubini, who was known to sing with so much vigor and strength. On one occasion, after he had sung with some great success, he was found to be ill, and the cause of his illness was found to be the fracture of his collar-bone, resulting from too great exertion of clavicular respiration. Sir Morell said there were too many pains taken by modern elocutionists to train the voice without regard to its accents. Accent was as necessary to good speaking as the cultivation of the vocal chords, from which speaking proceeded. In modern times public speaking was not nearly regarded as so important as it was formerly. The daily papers had to some extent destroyed the effect of mere oratory; but there was a great deal of public speaking in these days, and he believed that there was more of this speaking in this country than ever existed in any other enlightened country. It was for this reason he advocated the cultivation of the voice and the knowledge on the part of all those who had to exercise it in a public capacity.

Before a Select Committee of the House of Lords on the management of the metropolitan hospitals evidence was given by a representative of the Charity Organization Society with reference to the mischief caused by the indiscriminate administration of outdoor medical relief by hospitals. In the opinion of the witness this system rendered it impossible for provident dispensaries to exist, and pressed very hard on regular medical practitioners.

The Local Government Board have forwarded to boards of guardians copies of a regulation which has been made by the Commissioners in Lunacy, under the Lunacy Act of 1890, as to the use of mechanical means for the restraint of lunatics. The Commissioners say that they approach the duty imposed upon them by the Legislature with reluctance, and their doing so need not be construed as countenancing the practice, but they recognize that there are cases where mechanical restraint must be applied. They hold, however, that the application of it should be restricted within the narrowest limits possible and applied by the most humane means that can be contrived.

Dr. Herman has put on record several cases of amenorrhœa due to mental shock and with mental depression. He has come across cases in which shock was supposed to have caused cessation, but in which he believed the real condition was one

of mental depression, akin to defective nutrition and to melancholia, the amenorrhœa being beneficial rather than not. The uterus showed either some atrophy or no change. In all these cases the Weir Mitchell treatment, massage, and galvanism generally resulted in reëstablishing the function. Those who could obtain change of air, with exercise, food and tonics, attained a like result. Dr. Herman sees no advantage in local treatment, and asks whether there were any cases due strictly to mental shock, unaccompanied by melancholic symptoms. Amenorrhœa was the rule in melancholia.

At a meeting of the Clinical Society Dr. Colman described a case of Raynaud's disease in a girl 10 years of age. The disease attacked usually the two distal segments of fingers of the right hand, in which the ischæmic stage only was reached. The condition has existed for fourteen months. No premonitory symptoms preceded the attacks, the middle finger suddenly became blanched, and the affection then spread more or less rapidly to the other fingers. The thumb was rarely affected. When the left hand was affected, the spasm in both hands was symmetrical, but these attacks were rare. During three of these attacks, changes in the blood in the affected fingers were observed, viz.: crenation and breaking down of blood corpuscles and coloration of the liquor sanguinis. The attacks were worse in cold weather, but placing the hand in hot water would provoke an attack quite as readily as the application of ice-cold water. No hæmoglobin was ever detected in the urine, the small amount liberated being probably excreted by the liver.

For several years the Registrar-General for Scotland has appended to his annual report on the health of the population notes as to the relation between weather and health. There seems from these to be a clearly established gradation from the average highest months of death-rate, which occurs between December and March, up to the lowest average, which takes place in August or September. A mild winter is as a rule healthy, but there are exceptions, and in Scotland, as in most European countries, last winter was such an exception. The influence of weather on the spread of the more common diseases of the zymotic type seems also to be of a very marked description, scarlet fever and measles appearing to have fairly regular periods of maximum and minimum, in the variations of which weather plays a part.

The Marchioness of Salisbury opened a bazaar at the new Hospital for Women, Euston Road, in aid of the ground rent fund of the institution. The bazaar was most successful and a large sum of money was obtained. The institution is expected to be ready for opening for hospital purposes in the course of a few weeks.

The Gold Medal of the British Medical Association for distinguished merit will be presented to Surgeon Parke, of African fame, at the annual meeting of the Association in July. Dr. Parke has promised to be present. G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Annual Meeting of the Fifth District Branch of the New York State Medical Association—New York Academy of Medicine—Consolidation of Cancer Hospitals—Adirondack Park Association—New York County Medical Association—American Pediatric Society—Miscellaneous Gleanings.

The annual meeting of the Fifth District Branch of the New York State Medical Association, which was held as usual in Brooklyn, was unusually well attended this year, and was very successful in every way. A pleasant feature of the gathering was a bountiful luncheon served between the morning and afternoon sessions, and which was paid for out of the accumulation of interest from the Permanent Fund of the Branch. The President for this term is Dr. Wm. McCollom, of Brooklyn, and after his introductory address interesting biographical sketches of Dr. Isaac E. Taylor and Dr. Charles S. Wood, the lamented President of the New York County Medical Association, were read by Drs. John Shrady and C. A. Leale. The scientific papers were of a very able character, and among those reading them were Drs. W. H. Thayer, of Brooklyn, H. E. Schmid, of White Plains, and George T. Harrison, of New York. The next meeting of the Branch is to be held at Kingston, on the Hudson, in the latter part of July; and the programme will include an excursion for the Fellows and their families to the neighboring Catskill Mountains, such as proved so enjoyable in connection with the last meeting at Kingston, a few years ago.

At a recent meeting of the New York Academy of Medicine Dr. Robert Abbe read a valuable contribution to the comparatively novel subject of spinal surgery, reporting eight cases in which he had opened the spinal canal. Three were cases of paraplegia resulting from fracture of the vertebræ, one of Potts' disease, one of tubercular trouble (which was treated like a tuberculous joint), one of sarcomatous tumor pressing on the cord, and two of intractable brachial neuralgia. In the last case amputation of the arm had previously been performed without affording relief. In the case of tubercular disease the results were brilliant, but as a rule they were not very satisfactory; though sufficient to show that in certain desperate and otherwise hopeless cases the operation was worth attempting. At the final meeting of the Academy in its old building Dr. George M. Stern-

berg, of the Army, presented a report of his bacteriological researches in yellow fever, with magic lantern illustrations; after which there was a collation and social reunion. The handsome and commodious new building of the Academy on Forty-third street, near Fifth Avenue, will be ready for occupancy in the autumn.

At the semi-annual meeting of the New York Skin and Cancer Hospital it was announced that negotiations were in progress for the consolidation of that institution with the New York Cancer Hospital; and it is greatly to be wished that the plan may be consummated. The former has a small hospital of a few beds, associated with a large dispensary department, in the centre of the city, and a country branch with suitable buildings and abundant space splendidly located on Fordham Heights overlooking the Harlem River; while the latter possesses magnificent buildings in the upper part of the city fronting on Central Park. These buildings, which are not yet completed, have been erected, chiefly through the liberality of the Astor family, at an expense of many hundred thousand dollars. It was a matter of great regret to many interested in humanitarian work in New York that this newer institution, occupying to a large extent the same field, should have been started in opposition, so to speak, to the older one; as it was felt that energies and means which ought properly to be concentrated on a single object would be to a greater or less degree wasted in maintaining two separate charities of like character. A single institution with abundant resources is quite sufficient to carry on the work in question, and it will be a matter of sincere congratulation, therefore, if the proposed consolidation should be effected.

An Adirondack Park Association, with Dr. Alfred L. Loomis as President, has been organized for the purpose of preventing further destruction of the Adirondacks by lumbermen and others, and of establishing a State Forest Park in that region. At the meeting at which the organization was effected Dr. Loomis urged the protection of the forests from a medical standpoint; stating that when he first visited the region twenty-eight years ago he was suffering from apparently hopeless pulmonary disease, but returned to the city in less than a year entirely cured. Almost ever since then he said he had been sending patients there, because he was convinced that the Adirondacks were unsurpassed as a health resort. Their efficiency in this respect would soon depart, however, unless steps were quickly taken to stop the vandalism of the lumbermen and the railroads.

At the last meeting of the New York County Medical Association Dr. Paul Gibier, who was sent by the French Government to investigate the Florida epidemic of yellow fever, and who recently established and became director of the Pasteur Institute in this city, read a paper in which he described in detail the sensations experienced by himself and his two assistants at the laboratory during and after the process of inoculation by the Pasteur method. It was deemed safer that they should be inoculated, on account of the risk incurred in their manipulations with strong hydrophobic virus. Since the Pasteur Institute was opened a short time since quite a number of patients, from various parts of the country, have been treated at it. Among them has been Judge Masterson, of Brazonia, Tex., who was bitten in May by a dog supposed to be mad, and cabled to Pasteur in reference to coming to Paris for treatment. The latter sent word back that it would be much better for him, on account of the saving of time and expense, to place himself under Dr. Gibier's hands; and he accordingly did so. More recently seven boys from St. Joseph, Ill., who were all bitten by a rabid mongrel cur, have been under treatment at the Institute. The people of St. Joseph are much interested in their case, and a movement is said to be on foot among the citizens to raise a subscription to defray the expenses of the party.

Out of seven patients treated at the Institute during the month previous, in three cases hydrophobia was shown to have existed in the dogs that had bitten them by the inoculation of other animals with virus taken from the dogs. Moreover, one individual who was also bitten by one of these dogs, but who did not apply for treatment by the Pasteur method, died of the disease. In the four other cases rabies was very probable, but either the dogs had disappeared while alive, or it was impossible to secure their bodies for post-mortem examination.

During the first week of June the American Pediatric Society held its second annual meeting at the Mott Memorial Hall in this city, under the Presidency of Dr. J. Lewis Smith, the distinguished authority on diseases of children. A considerable number of those specially interested in this department of medicine from different parts of the country were in attendance, and the sessions were of much interest.

By a very happy stroke the Post-Graduate Medical School and Hospital recently secured, through the aid of the dramatic profession, a very handsome addition to its pecuniary resources. On a certain afternoon attractive theatrical performances were given for its benefit at three of our first-class theatres and at the Metropolitan Opera House, and as all the artists volunteered their services, the net proceeds of the series of entertainments were quite large. In return for the assistance given by the players the Post-Graduate Hospital guaranteed, from the money thus received, to endow for one year three beds for members of the Actors' Fund Association.

The new State Commission in Lunacy, in accordance with the provisions of the statute cre-

ating it, has taken important action regarding the commitment of the insane to asylums, and in order to secure absolute uniformity and accuracy in the matter, has distributed for use throughout the State forms in regard to the examination of persons supposed to be insane and to the qualifications of physicians acting as examiners in lunacy. This, of course, is a matter in regard to which too much care cannot be observed, and its importance is emphasized in a case which has recently been brought to the attention of the grand jury in the neighboring city of Hoboken, N. J. The facts of this case, as reported, are that the commitment of a perfectly sane woman was secured by her husband to the State Asylum at Morris Plains, where she was detained for a month before her father, to whom she wrote for aid, succeeded in effecting her release. The certificate on which she was received into the asylum was signed by her family physician and by the City Physician of Hoboken, and the evidence given in the case showed that the former had not seen her for two months before he signed the certificate, while the latter had never seen her at all, and signed the document simply on hearsay.

One of the greatest successes in recent medical literature, and deservedly so, has been the "Handbook of Physical Diagnosis of Diseases of the Organs of Respiration and Heart," by Dr. R. C. M. Page, Professor of General Medicine and Diseases of the Chest in the New York Polyclinic, and recently chairman of the Section on Practice of the New York Academy of Medicine. Within a few months after the issue of the first edition a second edition was called for, showing that the unusual excellence of the work is suitably appreciated by the profession. In this work the illustrations by Dr. Henry Macdonald, many of them beautifully colored and most of them original and copied from life or pathological specimens, constitute a feature of very special interest.

The most elaborate and gorgeous Chinese funeral services ever seen in this city were those of Dr. Young Doo Hing, a physician of great repute and of high rank in the Masonic order, who died of phthisis a short time since. Although he is reported to have had a very large practice among his countrymen, he does not seem to have been possessed of any property to speak of at the time of his death; but he was apparently immensely popular in the Celestial community, and when he died his friends contributed some five thousand dollars to give him a becoming send-off to the realms of almond-eyed blessedness. For days before the funeral Mott Street, the centre of the Chinese quarter, was thronged with people who made the air resound with the continuous din of firecrackers, gongs, tin pans and various kinds of wind instruments of soul-entrancing melody. The obsequies were conducted in the most approved style of Chinese Masonic splendor, and the funeral procession was a most imposing affair. The hearse, which was drawn by four black horses, was preceded by a "royal guard" in glittering helmets, and a body of mounted Masons with many gorgeous banners, accompanied by Chinese and Italian bands of music, and was followed by a line of seventy-five carriages, while it seemed that every Chinaman in New York and all the adjacent cities and towns had come to look at the spectacle. At the completion of the services at the grave all the personal effects of the deceased were piled up in a heap and burned, in the confident expectation that the various articles would be ready for his use as soon as he arrived at the gates of Paradise.

There is an old newsboy who travels on one of the branch lines of the New York and New Haven Railroad who is cutting a third set of teeth. The new teeth are said to be making favorable progress through the gums, and it is believed they will be strong and serviceable. He is now in his eighty-second year and he is probably the most venerable newsboy in the service. P. B. P.

NECROLOGY.

Charles Henry Lothrop, M.D.

Dr. Charles Henry Lothrop died at his home in Lyons, Iowa, February 6, 1890. He was born September 3, 1831, at Taunton, Mass. His parents, Cornelius White, and Elinor Lothrop, were both of English descent. On his mother's side he could trace it back to the Pilgrims of the "May Flower." At the age of 16 he began teaching, and taught school several years at Taunton and vicinity. Attended college two years at Brown University, Providence, R. I. Attended one course of lectures in the Albany Medical College. Graduated June, 1858, in the Medical Department of the University of the City of New York. He then located himself in Lyons, Iowa, and soon attained a good rank in his profession. At the beginning of the war for preservation of the Union, he volunteered his services, and for four years did excellent service as Assistant Surgeon of the First Regiment of Cavalry of the Iowa Veteran Volunteers. He was present in not less than fifty-two engagements. He was married May 6, 1876, to Sarah V., daughter of Rev. John Naille, of Elizabethtown, Pa.

Dr. Lothrop has been a prominent figure in Lyons, both professionally and as a citizen for the last thirty years of his life. He was a member of the Iowa and Illinois Central Medical Association, the Iowa State Medical Society, a member of the Examining Committee of the Medical Department of the Iowa State University, and since 1868 an examining surgeon for pensions,

and a member (by invitation) of the American Medical Association since 1873.

Although suffering the inconveniences of paralysis of the lower extremities, for the last seventeen years, he has by his indomitable will and acknowledged skill as a physician and surgeon, attended to a large office practice most of the time, has written several medical essays, some of which have been published in the *Boston Medical and Surgical Journal;* has compiled and written the "Iowa State Medical and Surgical Directory," acted as examining surgeon for pensions, and but a few weeks before his death, by the aid of his wife, practically completed the "History of the Iowa Cavalry," which constituted his most valuable literary achievement. He was a member of Col. N. B. Howard's Post G. A. R., of DeWitt, Iowa, and a member of the Legion of Honor.

Dr. Lothrop was a man of earnest convictions and strong feelings. He was an indefatigable worker. He was an intense patriot. It has been the good fortune of but few Army Surgeons to be the recipients of greater praise than was bestowed upon him by the soldiers of his company. And in the death of Dr. Lothrop the soldiers have lost a trusted and true friend, the medical profession a valued member, and the cause of humanity one of its most useful servants. J. B. I.

BOOK REVIEWS.

Physicians' Leisure Library. A TREATISE ON FRACTURES. By PROF. ARMAND DESPRÉS, Surgeon of Charity Hospital; member Society of Surgeons; member Anatomical Society, etc. Translated by E. P. HURD, M.D., member Mass. Med. Soc., member Société de Médecine Pratique, etc. Detroit, Mich.: George S. Davis. 1890. Pp. 112.

This brochure is taken from the third edition of Després' work entitled *Chirurgie Journalère.* It contains short accounts of the treatment of the more common forms of fracture, with some additions to the original work which have been made by the translator.

MISCELLANY.

LA GRIPPE IN INDIA.—The *Indian Medical Gazette* says, the local names which this disease has acquired in its travels are almost as many as the countries visited. It is now prevalent in India. It first appeared in Bombay, and in Calcutta it is called the Bombay fever. Soldiers, artizans, clerks, police and prisoners have been attacked. The severe symptoms of pneumonia and capillary bronchitis which accompanied the disease in cold climates have been rare in India. Where relapses have occurred the disease has been alarming on account of the extreme debility following the attack.

LETTERS RECEIVED.

Dr. R. J. Dunglison, Dr. C. Seiler, Phila.; Dr. G. P. Reynolds, Alameda, Cal.; Dr. H. A. Hughes, Phœnix, Ariz.; Dr. M.D. Ewell, Dr. H. Wardner, Chicago; Dr. S. O. L. Potter, Dr. R. H. Plummer, San Francisco, Cal.; Dr. H. A. Carrington, Buffalo, N. Y.; Chicago, Milwaukee & St. Paul Ry. Co., Milwaukee, Wis.; Dr. M. W. Knight, Milford, Mass.; Dr. S. Norman, Evansville, Ind.; Mrs. A. N. Wilson, Boston, Mass.; Dr. B. F. Arnold, Newport, R. I.; Dr. J. Hawes, Greeley, Col.; Dr. J. E. Best, Arlington Heights, Ill.; Hattie E. Simington, Danville, Pa.; Dr. N. Hibbard, Danielsonville, Conn.; Dr. W. A. Boor, New Castle, Ind., J. W. Beidelman, Little Rock, Ark.; Canton Surgical & Dental Chair Co., Canton, O.; Dr. J. G. McDougal, New Lexington, O.; Dr. J. B. Lindsley, Nashville, Tenn.; Dr. H. Lint, Hub City, Wis.; Dr. E. B. Mauk, Malinta, O.; Dr. M. A. Keller, Monticello, Ill.; Madison Reece, Abingdon, Ill.; The Parmenter Printing Co., Lima, O.; Dr. W. H. Coffman, Georgetown, Ky.; Dr. L. D. Mason, Brooklyn, N. Y.; Dr. X. T. Bates, Poughkeepsie, N. Y., Dr. R. Le Baron, Pontiac, Mich.; Dr. A. Robinson, Bangor, Me.; H. L. Collins & Co., Dr. A. Sweeney, St. Paul, Minn.; Dr. T. L. Dasque, Allegheny, Pa.; Dr. J. W. H. Lovejoy, Washington; Dr. W. G. Weaver, Wilkes Barre, Pa.; Thos. Leeming & Co., N. Y.; Dr. F. B. Davidson, Fleetville, Pa.; Dr. C. R. Reed, Middleport, O.; Dr. W. S. Brown, Stoneham, Mass.; The Maltine Manufacturing Co., New York.; McIntosh Battery & Optical Co., Chicago; Dr. H. H. Mudd, St. Louis, Mo.; Dr. B. A. Watson, Jersey City, N. J.; Dr. C. G. Bacon, Fulton, N. Y.; Dr. D. J. Townsend, Lohrville, Ia.; Dr. M. L. Hildreth, Lyons, Neb.; Dr. F. M. Bell, Kelso, Washington; Dr. A. D. Bundy, St. Ansgar, Ia.; Robert Clarke & Co.; The Victor Safe & Lock Co., Dr. Max Thorner, Cincinnati; Dr. D. J. McCaffrey, Blackstone, Mass.; Dr. N. Senn, Milwaukee, Wis.; P. C. Lewis, Catskill, N. Y.; Ragsdale & Chassell, Le Mars, Ia.; J. M. Dunham, Columbus, O.; The Univ. of Minn., Minneapolis, Minn.; Dr. G. F. Lydston, Chicago; Dr. Thos. Opie, Baltimore, Md.; C. Thomson, New York; T. W. Hannaford, London, Eng.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 7, 1890, to June 13, 1890.

Capt. William D. Dietz, Asst. Surgeon, is granted leave of absence for one month. Par. 4, S. O. 131, A. G. O., Washington, D. C., June 5, 1890.

Capt. L. W. Crampton, Asst. Surgeon, is granted leave of absence for one month, to take effect the 15th inst. Par. 5, S. O. 75, Dept. of the Missouri, St. Louis, Mo., June 9, 1890.

By direction of the acting Secretary of War, Capt. John de B. W. Gardiner, Asst. Surgeon, having been found incapacitated for active service by an Army retiring Board, will proceed to his home. Par. 12, S. O. 135, A. G. O., Washington, June 10, 1890.

By direction of the acting Secretary of War, Major George M. Sternberg, Surgeon, will, in addition to his present duties, perform the duties of the post surgeon at Ft McHenry, Md., during the absence of that officer on leave.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending June 14, 1890.

Surgeon M. H. Simons, ordered to the U. S. S. "Enterprise."

CORRIGENDA.

In Dr. L. D. Mason's article published in THE JOURNAL of June 7, entitled "A Study of 4,663 Cases of Alcoholic Inebriety," under *Results of Treatment*, page 824, reads 29½ per cent. unimproved, should be 19½ per cent. unimproved. Page 824, second column, reads thirty-six *cases* were lost sight of or unimproved, should be thirty-six per cent. were lost sight of or unimproved.

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ADDRESSES.

LARYNGOLOGY AND OTOLOGY: THEIR RELATIONS TO EACH OTHER.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY JOHN O. ROE, M.D.,

OF ROCHESTER, N. Y.

CHAIRMAN OF THE SECTION.

Another year has past, and once again we meet to grasp each other by the hand in cordial fellowship, to bring with us the results of our labors during the past year, and to carry away with us such food for thought as will make us more efficient for good work during the year to come.

It is unnecessary for me to express in any formal manner my appreciation of the high honor which I have received in being chosen to preside over your deliberations during the present session.

The year just past cannot be said to have been an eventful one in the departments of laryngology and otology. Although the literature of these subjects has been voluminous, we are unable to announce anything of very marked importance which has been contributed to the improvement of our therapeutic measures. The advancement which has been made has been in the line of paths already well-beaten, rather than in the exploration of new fields of research.

It is with deep regret that we must record the death of Voltolini, who has added, during his long and active career, so much valuable material to the departments of medicine in which this Section is specially interested. He has left us a valuable memento in his last work, which is a most important contribution to our scientific knowledge of the diseases of the nose and naso-pharynx.

Before proceeding with the regular business of the session, permit me to call your attention to a few words upon the mutual relations of laryngology and otology. Under the term "laryngology" rhinology is generally understood to be included; but this latter branch is of sufficient importance to be regarded as coördinate with laryngology and otology. Strictly speaking, this department should, therefore, be a laryngological, rhinological and otological Section. The relations between these three departments are intimate and inseparable. We, hence, believe that it was a great mistake for the International Medical Congress, the British Medical Association and the Congress of American Physicians and Surgeons to divorce otology from the family to which it belongs, by making it a separate Section. This mistake is at once seen when we consider that very few diseases of the ear can be successfully treated without a thorough knowledge of the diseases of the nose, naso-pharynx and fauces. It is not enough for one who would be skilled in the treatment of the diseases of the ear to be able to detect the more pronounced diseases of the nose and throat; he must also be able to recognize the slightest abnormalities in the nose and throat, and be sufficiently skilled to correct these as well. For example, the limited bony pressure of a small exostotic spur in the nose might be the means of exciting a persistent tinnitus or a labyrinthine congestion; and without the removal of this exciting cause, the treatment of the ear would be futile.

And, on the other hand, it is not sufficient for the laryngologist and rhinologist to understand simply the diseases of the throat and nose; he must understand as well the diseases of the adjacent organs, which so frequently become secondarily involved. He must not only be familiar with the use of the laryngoscope and rhinoscope and the nasal speculum as diagnostic aids, but he must also become thoroughly conversant with the use of the aural speculum and the tuning fork. It would be as foolish for the rhinologist to ignore the large number of aural complications that he meets with in his rhinological work, as it would be for the laryngologist to ignore the pulmonary condition that was associated with or resulted from a disease in the larynx that he was treating. This is apparent when we consider that nearly all the abnormal changes that take place in the ear result from those diseases in the throat and nose which produce narrowing or obstruction of the Eustachian tube.

It is an encouraging sign of the time to see otology seeking a divorce from its old associate, ophthalmology, and forming an alliance with its more congenial friends, laryngology and rhinology. Notwithstanding the fact that ophthalmology is still trying to maintain its former relation

with otology, it must be evident to every intelligent person that the eye and ear have too little in common to justify this relationship. One of the leading men in the ranks of the old *régime* recently said, that he hoped he was the last of the race to harness the two together; and I am sure that every one in this Section will congratulate him upon his frank confession.

In glancing over your programme, gentlemen, you will observe that we have endeavored to preserve the proper relation of laryngology and otology, and so to arrange the papers as to compel the laryngologist and rhinologist to listen to the words of wisdom from the otologist; and, in turn, to teach him what he should know about the diseases of the throat and nose. I predict that, in the near future, they will be regarded as the most expert otologists who know the most about the throat and nose; and that the expert laryngologist and rhinologist will not know less than the otologist about the diseases of the ear.

In order to make this Section of special interest to many who may not be directly concerned in laryngology and otology, a discussion has been prepared with reference to questions pertaining to croup and diphtheria. This discussion cannot fail to interest every practitioner of medicine, and particularly the members of that Section which is devoted to the diseases of children. The members of that Section we hope to meet with us in common session on Thursday afternoon, and we trust that they will freely participate in that discussion.

The value of systematic and prearranged discussions on important questions is, I believe, too little recognized in our medical conventions. We believe such discussions to be much more valuable than the simple reading of separate papers on a variety of subjects, however carefully prepared they may be. A paper becomes doubly valuable when it provokes a free and intelligent discussion upon its merits and defects. We cannot overestimate the importance of a careful comparison of opinions on the part of those whose researches and experience qualify them to contribute to the cause of medical science. We may accept the wise words of Talleyrand, that "all men know more than any man," and I believe that by combining our wisdom and experience, we may each of us make some valuable addition to the sum of our knowledge.

I will not detain you, gentlemen, with any further remarks of my own, since we have so long a programme before us and so many valuable papers which merit our attention.

SANITARY conventions will be held under the auspices of the Michigan State Board of Health at Alpena, July 10 and 11, and at Charlevoix, August 14 and 15.

ORIGINAL ARTICLES.

A FEW CLINICAL OBSERVATIONS ON OPERATION FOR CONGENITAL CLEFTS IN THE GUMS, LIPS AND PALATE, IN EARLY INFANCY.

Read in the Section of Dental and Oral Surgery, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY THOMAS H. MANLEY, A.M., M.D.,
OF NEW YORK.

As defects of development or deficiencies of growth in and about the buccal and nasal cavities, of varied phases and degrees, are extremely common, it might seem that anything offered, of a practical character, in connection with them, would be of special interest and value to dental surgeons, whose domain, in my judgment, should include the whole bony framework of the alveolar arches, the palatine vault, and the cavernous sinuses of the nares, covered and nourished by the membrane of Schneider.

In the process of evolution, from birth, up through the varied stages of bodily growth, it is interesting to note, with the eruption of the teeth, the period of suckling, and the acquisition of speech, the many delicate and complicated changes in adjustment, structure and function, observed along the outlines and walls of the oral portal; that opening through which must pass all the aliments, the respiratory gases, and phonetic sounds, and on the harmonious contour of which so much depends, for expression, character and beauty. My experience has led me to the conclusion that, with the solitary exception of a fissure in the soft palate, the time at which many congenital defects in this region may be most successfully and rapidly remedied, is when the infant is very young, and during the early stages of development.

During the past eighteen months, I have done five operations for harelip, in all of which the gum was fissured, and the floor of the nose opened through. When I have had the opportunity of selection, I have always preferred the *earliest possible* period after the delivery of the mother.

I am convinced that, in the vast majority of these cases, the deformity is due, not to any deficiency of structure proper, but to a defective arrangement; and acting on this theory, my line of action has been, to replace the divided parts before ossification is well advanced, while those thin cartilaginous shells and tufts are readily flexible, and yield under moderate pressure.

I have observed in every instance, that with a limited osteoclasis, and reposition of the separated osseous segments, the division, in the soft parts, almost wholly disappears. The tension being removed, the refreshening and union of the cleft labia were always a matter of ease and simplicity. My patients' ages ranged from a few days to 6 months.

The first of this series had a fissure extending through the lips, gum, and hard palate, and was 9 days old when I operated. After a preliminary osteoclasis, I wired the separated edges of the alveolar borders of the gum with silver wire; then carrying the scalpel along the dividing line of the mucous and cutaneous convexity of the lip, separated, and later closed them, after the method of Maurice Collis, of Dublin, *i. e.*, not the *smallest particle* of tissue was sacrificed.

The wound healed kindly, and in ten days all the superficial sutures were removed. The baby now took the nipple, and continued thereafter to nurse, without the least difficulty. In three weeks' time I removed the deep, osseous, metallic sutures.

My next cases, two in number, I operated on in the summer—early in August. One baby was 4 days old, the other 8 days.

With the first, the cleft was through all the parts, hard and soft, into the pharynx, on one side only, the left; the alveolar ridge, nasal septum and palate being forced outward, and away from the left, for a considerable distance. Owing to the great chasm, and for want of some sort of central support, the columnar nasi had fallen in; which gave the nose a flattened out, shapeless form.

This case, though accompanied with the greatest degree of distortion, was the most simple of management. Acting precisely on the same principles as the preceding, the divided segments of the arch were brought together, and the vermilion borders of the lips closed. This case did well, except that two of the superficial sutures ulcerated through, requiring another trivial operation on the thirtieth day. Four days after the operation I was obliged to be absent from the city for two weeks, and it was during this time, for want of proper attention, that the accident happened.

The third had a double ridge, spreading widely open both cavities. The nasal and buccal cavities were thrown into one. The intermaxillary tuft was crowded forward, and curved in an upward direction. The little one, owing to the want of any sort of suction apparatus, swallowed with great difficulty. Every time liquids were swallowed, the head had to be well thrown back, and fairly poured into the stomach-tube. In proceeding with the operation in this case, for the first time, I had to use the chisel and mallet, in order to bring the bones into position, doing an osteotomy on both sides. I entered the chisel just posterior to the canine fossa, on a line with the pterygoid process of the temporal bone. This enabled me to replace the bony segments and complete the operation in the usual manner. The advanced state of ossification in this case was most singular. But we sometimes meet with an analogous state of the cranial bones, in parturition, which makes labor difficult or impossible.

As this infant was operated on at the same time as the second, from the same causes primary union was not wholly complete, and some later repairing had to be done. After this, the little one did well, the wound completely closing, when he was taken down with cholera infantum and died. Case four was identical anatomically with the one third narrated, except that owing to the child's advanced age, several changes had taken place. He was 6 months old. The central segment was pushed much further forward; the maxillaries on both sides had advanced in similar directions, to such a degree that their anterior margins barely touched each other; in this manner lifting up and throwing forward the piece attached to the perpendicular plate of the ethmoid, and giving it a most hideous and snout-like appearance. The parents kept the mouth almost constantly covered, not only to conceal the deformity, but to prevent the almost constant drooling from the open vent. It was quite apparent at the first glance, without examining in detail, that there was a formidable case before us for operation. The time for dentition had arrived, the powers of locomotion, observation and reason were becoming manifest; the parts had firmly ossified, and adapted themselves to their deformed position; hence an operation which contemplated the division, resection, or crushing in of those parts, must be attended with much loss of blood, and great shock. This, indeed, seemed so clear to me, that I fully advised the parents of the great dangers in the way, and made up my mind to divide the measures for relief into two or three operative stages. Prof. Jarvis had recommended me to the mother of the child, and as they had come a great distance, they were determined to take the chances, rather than have the boy grow into manhood with this terrible deformity.

My plan of attack was, to first content myself with an osteoclasis; to forcibly crowd back and fracture the maxillaries, then, if the septum refused to yield, remove a wedge of it, at the point of junction of the vomer with the ethmoidal plate. This would permit me to place the intermaxillary segment where it belonged, and as the tuft always contains four teeth, the central and lateral incisors, it was indispensable to save it at all hazards, for without it, the shape of the mouth is forever lost, and as the opposing jaws would so widely deviate, that the use of the teeth as triturators or grinders of the food would be forever lost. If I succeeded well with the preliminary operation and the baby safely survived it, I intended later to do a superficial plastic and uranoplastic operation. Very much to my surprise and gratification, on moderate pressure, the lateral walls of the upper jaw gave away sufficiently to allow me to bring closer, and fit into the breach made, the projecting intermaxillary tuft. Before, however, this came into position, I had to remove a small U-shaped piece of the bony septum. Now I passed a heavy riveted piece of wire through the

margin of the upper maxillary, through the centre of the intermaxillary, transfixing and permanently adjusting its free end, near the border of the opposite segment. This step solidly and firmly fixed the whole alveolar arch; besides gave form and expression to that part, where before there was none. As this was so readily and rapidly executed, I was tempted to complete the plastic on the soft parts at the same time; which I did. The infant was under chloroform something more than two hours.

He rallied well, and his prospect seemed excellent till the evening of the next day, when his temperature went up to 103° at midnight, when I was called and found him in a violent convulsion. He came out of it a moment after I entered. Now 3 grs. of quinine were given him *per rectum*. The next morning his fever had disappeared, and his general condition was good. His wound did well. On the sixth day I removed two of the superficial sutures on each side. Primary union had taken place except at the point where the base of the nostrils were closed. Here there had been infection from the nasal mucus. I introduced a fresh suture, and provided against future infection by stuffing both apertures with iodoform gauze.

When the integument was well healed, and the three separated segments had fused together, I removed the deep girder of wire from the bony structures underneath. The mother and child left for home just two weeks from the day of operation.

Fifth case. Male child 8 weeks old. This case was also one in which there was a double fissure dividing everything from the lip backward through the gums, hard and soft palate, except along the under convex margin of the nasal openings, where a very narrow ridge of integument connected the nasal cartilage with apex of the cleft lip.

The intermaxillary segment was displaced forward to considerable extent, but not to such a degree as in the other cases, owing to this very diminutive but useful remnant of cutaneous tissue, moderating and restraining a further outward advance of it.

Though the baby could not draw the mammary gland, he was able to nurse the bottle through the rubber nipple, but, owing to the inability of perfecting the intermittent vacuum in suction, a considerable quantity leaked out from above, through the nares.

The child was fairly healthy, though not very vigorous. This baby was operated on Wednesday, May 13, and through the courtesy of the family physician, Dr. Geo. S. Lamoree, of Highland, New York, and by consent of the parents, it was done at my usual weekly clinic at the Harlem Hospital. I commenced operative procedures, *in this instance*, by cutting off the immediate and largest blood supply to the parts, through which the blade must pass, by ligating both coronaries at each labial commissure with the temporary transfixion ligature. Then the field of operation was thoroughly washed, and drenched with the mercuric chloride solution, and every source of possible contamination shut off by light, soft sponges.

Finding that the bony septum was somewhat resistant to backward pressure, I cut a thin wedge-shaped piece away from it, when I was able to place the central tuft where nature intended it should permanently lodge. The remainder of the operation was completed in the same manner as all the preceding.

The clinical, though only one side to be considered, in connection with these cases, is full of interest, and is, I think, second only in importance to operative procedures.

In every one of these cases there was either a history of heredity or maternal impression. In case 1, maternal fright was clear and unmistakable. In case 2, the father's labio-nasal column was clearly defectively developed at birth, as evidenced by the immobile, contracted movement of the upper lip. In cases 3 and 5, maternal impressions were unquestionable, as both mothers' immediately preceding children were similarly marked. In case 4, a cousin of the mother had this deformity. In both of these operations had been done, but neither of the babies survived. In my series there were three females and two males. In all, nursing was impossible until the breach in the tissues had been closed in. Certainly, in every instance, a most repulsive deformity would remain if the chasm were left open, and all labial and lingual articulate sounds would be impossible of utterance.

The nasal secretions, especially of a catarrhal character, discharging into the mouth and blending with the aliments, must inevitably befoul and taint the stomach, constantly provoking indigestion or diarrhœa.

The fundamental principles to be observed in the operation for relief of this deformity, as I perform it, while simple, must yet be observed to the letter, or our efforts will fail to attain what we aim for.

1. To operate as soon as possible after birth, provided the infant is healthy.

2. To do a preliminary osteoclasis when the bony framework is involved.

3. Hæmorrhage must be absolutely suppressed when possible.

4. Antiseptics must be applied with the utmost diligence, as on the latter we almost solely depend for primary union of the soft parts.

5. In trimming or preparing the margins for adaptation, or adjustment, it is of cardinal importance that not the slightest morsel of tissue be sacrificed; for though, by free paring or slicing away, the mechanical part may seem more simple, and the immediate cosmetic effect will be

better, yet it must be borne in mind that condensation and contraction follow every sort of mutilation of the integuments, no matter how slight; and further because, in the process of evolution of the teeth, the parts will be put on the stretch to such an extent as to totally obliterate the apparent good effects of the operation, rendering speech difficult and painful, and the ready opening of the mouth impossible.

6. Unless under exceptional circumstances, the surgeon should decline to operate unless his patient remain within convenient distance, so that he can be seen once or twice a day, or oftener, during the first week—in fact, until solid union of the superficial parts is solid and complete.

As the region of operation in these cases is in immediate contact with escaping mucus and saliva, milk, soups, or other liquid aliments, it is extremely difficult to preserve the line of suture wholly free from pathogenic germs. To provide against this as far as possible, it is necessary to close in everything hermetically, and to stuff both nares well from the bottom with iodoform gauze; hence I use liquid collodion, applying several coats of it before adjusting other dressings.

Unfortunately, in some cases the tender cuticle is intolerant to antiseptics and a painful dermatitis develops, when the dressings must be promptly changed, or the deeper connective tissues become involved, with a plastic exudate and swelling which will seriously disturb or prevent healing. In one of my cases every sort of suture excited ulceration along its tract, and I had to depend on adhesive plaster to complete the sealing of the part. The constitutional treatment is of vital importance.

The infant is always in pain, for the first day or two, and needs the *unceasing* attention of the mother. No *nurse* can take her place. I invariably give a small dose of calomel immediately after operation, and sufficient of the camphorated tr. of opium to keep the infant quiet, for violent crying puts the parts on a dangerous strain; besides, I believe convulsions are less apt to follow when the reflexes are not blunted by the analgesic action of the narcotic.

I allow the usual food to the infant when not nursing, though in two instances the patient was able to take the nipple of the mother after the tenth day. In every case, with a nursing child, the milk should be drawn away and fed to the baby until union is complete, when it can be taken in the usual way.

NOTE. In case 5, three days before I left for the Nashville meeting, I operated. When I returned I found everything broken down; sepsis had developed, rendering everything a total failure. I now divided the oral muscles on the right side and went over the procedure again, but succeeded only in fixing the intermaxillary bone, and getting union of the soft parts on one side. As the baby was very frail and inclined to tuberculosis, I had the parents take him home. I will, later, when his general health is improved, endeavor to unite the cleft on this side. In the meantime I have, in presenting this brochure, been desirous of having my professional brethren see just precisely and honestly what has been done, the bad or unfavorable results, as well as the successes.

A PLEA FOR EARLY OPERATIVE INTERFERENCE IN ACUTE PERITONITIS, WITH ESPECIAL REFERENCE TO THE SO CALLED IDIOPATHIC PERITONITIS IN CHILDREN.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 2, 1890.

BY G. FRANK LYDSTON, M.D.,
OF CHICAGO, ILL.

A perusal of the record of results of strictly medical treatment in acute peritonitis, since that disease was established as an entity by Bichat, in 1802, is not conducive to professional conceit. Before the introduction of the opium treatment by the late Dr. Alonzo Clark, in 1850, the disease was almost invariably fatal. Prior to Clark's innovation opium had been given in moderate doses by Stokes, Graves and others, for its anodyne effect. Clark, however, advocated putting the bowels, as he expressed it, in "opium splints" through the medium of full narcotic doses of the drug. According to this eminent authority the criterion for the administration of the drug is the production of the following symptoms: "Subsidence or marked diminution of the pain; some or considerable tendency to sleep; contraction of the pupils; reduction of the breathing to twelve respirations per minute. In the favorable cases a considerable reduction in the frequency of the pulse; a gentle perspiration and itchy state of the skin, or oftener the nose. Absolute inactivity of the bowels, and after a time subsidence of tumescence and tenderness and some suffusion of the eyes."

This treatment was immediately adopted by the majority of progressive physicians as a routine measure, and has, strange to say, for forty years been the main reliance. Reaction against this routinism is but just now attaining prominence. In no other field of medicine has there been a less pronounced spirit of progressiveness during all these years than in the treatment of peritonitis. The ready adoption of the opium method and the implicit reliance which was placed upon it, was probably due to the fact that previous methods of treatment had signally failed, and the new method had at least the merit of saving a certain proportion of cases, and under its use the sufferer from the disease was certainly comfortable. As compared with the success attainable in other acute inflammatory affections, the opium treatment of peritonitis has not proved a brilliant success.

In an excellent article upon peritonitis, Dr. Stiles Kennedy,[1] of St. Louis, Mich., concisely presents the true status of the opium treatment when he says: "Speaking for myself, with

[1] American Lancet, December, 1889.

thirty years' active practice, I pronounce the treatment a miserable failure. All patients do not die under the opium treatment, but 75 per cent. of them do." With a much shorter period of observation, the brevity of which, however, has perhaps been compensated for in a measure by several years hospital experience, I can heartily endorse Dr. Kennedy's position. Great as was the advance in therapeutics instituted by Dr. Clark, it unfortunately came to be regarded as the *ultima thule* of therapeutics of abdominal inflammations. Who is there here but will bear me out in the assertion that any attempt to classify and differentiate abdominal inflammations with regard to a discriminating selection of therapeutical methods, has usually been regarded as rank heresy,—I was going to say malpractice,—ever since the opium treatment came in vogue? Even those who have discriminated between traumatic and so-called idiopathic cases of peritonitis have failed until quite recently to discriminate in the matter of treatment. Septic cases, in which apparently the principal object to be attained is the draining away of putrid materials both from the abdominal cavity direct and *via* the intestinal canal, have been treated upon the same principles as cases which were apparently of non-septic origin.

There is a feeling at present among progressive physicians,—and to strengthen this is the principle object of this paper,—that peritonitis is, so to speak, more of a surgical disease in general than it has been regarded heretofore. Speaking for myself, with a keen realization of the hopelessness of the majority of cases when medically treated, and I believe, with a proper appreciation of the origin of the disease in the majority of cases, I feel warranted in the assertion that peritonitis should nearly always—I was going to say invariably—be relegated to the domain of surgery. To put it vulgarly, I might support this position by the assertion that the physician has had an inning of forty years' duration, which, to carry the base-ball phraseology a little further, has resulted in a "goose egg." It is but fair that the surgeon now be given a chance to compare methods at least ; as far as experience has gone the results of surgery are certainly more encouraging than those attained by medical treatment. The more thoroughly the pathology of peritonitis is studied the more obvious the truth of this assertion becomes. Like most surgeons, I now see few cases of peritonitis which are not distinctly recognized as traumatic. As most cases are supposed to be idiopathic, the surgeon sees comparatively few such. I believe, however, that a proper appreciation of the true pathological and etiological status of the disease on the part of the general practitioner will enable the surgeon to observe and treat such cases more frequently.

The etiology of peritonitis has attracted considerable attention. It has usually been divided into idiopathic (primary and secondary), and traumatic.

I have no hesitation in putting myself upon record as believing that there is no such thing as primary idiopathic peritonitis. The more carefully we inquire into the history of the disease the narrower the range of the so-called idiopathic cases becomes. To attribute the disease in the absence of any known organic cause, to exposure to cold, dietary indiscretions, etc., is, it seems to me, simply a substitute for an honest expression of ignorance. That the disease may be secondary to certain constitutional affections is probably correct. It has been attributed to rheumatism,[2] erysipelas,[3] and the various eruptive fevers, especially scarlatina,[4] equinia or glanders,[5] septicæmia, and purulent infection.[6] Its dependence upon puerperal septicæmia, uterine and pelvic inflammations is well known. Anstie describes epidemic infectious peritonitis as being due to sewer gas. Certain chronic constitutional diseases, such as gout, Bright's disease, and tuberculosis are well known causes. Renal disease, as a cause of abdominal inflammation, is mentioned by several excellent authorities.[7]

Traumatic peritonitis is not always easily traced to its cause. There are many cases of course which are readily so traced. A history of injury with palpable lesion, either in the form of penetrating wounds, or such conditions as contusion or rupture of the liver, spleen, stomach, intestines, kidneys, bladder, or womb is most usually elicited.

The relation of cause and effect is sufficiently plain in the case of operative interference with the abdominal cavity or its contents. Certain rough manipulations of the abdomen have been known to produce the disease. Compression of the left ovary in an hysterical woman has been known to produce it.[8] I mention this especially to show how slight a cause is sometimes sufficient.* The dependence of the disease upon minor gynecological operations, intestinal perforation from various causes, such as typhoid fever, typhlitis, perityphlitis, etc., is well recognized.

Although it is supposed that idiopathic peritonitis may occur at any age up to that of 55 years, it is a well recognized fact that "idiopathic cases" are relatively much more frequent in children, the frequency being in inverse proportion to the age.

Children are very often taken with the disease while apparently in a condition of perfect health. This, it seems to me, is in itself inconsistent with

[2] Vivant, 1884.
[3] Cheurlin, 1879.
[4] Moor. Dublin Journal Medical Sciences, 1876.
[5] Mahomet. Schmidt's Jahrbücher, 1884.
[6] Hilton Fagge, 1873.
[7] Woillez. Bull. de la Soc. Med. des Hôp., 1885. Hilton Fagge. Guy's Hospital Reports, 1873-1875.
[8] Comby. De Bull. de la Soc. Anat., 1880.
* There was possibly, in this instance, tubal disease, the contents of the tube being discharged or its walls ruptured by the manipulation.

the idiopathic theory;—a fact which is significant is that adhesions and pus are an almost invariable result of idiopathic peritonitis. One of the best arguments in favor of surgical interference that I have seen is the näive assertion of Gauderon that recovery sometimes follows the escape of pus through the umbilicus. This mode of termination was noticed by him in eleven cases out of twenty-five, and of these eleven cases there were eight recoveries. It would be interesting to note how many of the remaining fourteen cases recovered, as showing in how far the chances of recovery were directly dependent upon the exit of the pus; *i. e.*, in how far nature's surgery was a hint to the surgeon.

It has occurred to me that the reason for the greater apparent frequency of idiopathic peritonitis in children is due to their inability to describe the particular accident to which the inflammation should properly be attributed. Children receive so many bumps and falls that even when well advanced in years they are not likely to attribute any special importance to any particular accident. The peritoneum being more sensitive in children their greater susceptibility to peritonitis from slight injuries is at once obvious.

Leaving secondary peritonitis out of the question, I do not believe in the existence of the idiopathic variety of the disease in young children. It is very easy to injure the peritoneum, especially in young subjects in whom the strength and thickness of the abdominal walls are by no means proportionate to the responsibility of protecting the viscera. Abdominal fat in young children, for example, is not very abundant. The sensitiveness of the abdominal contents in children to various causes of irritation is a well recognized explanation of the excessive mortality rate of childhood. Not only are the viscera relatively more sensitive than in the adult, but the peritoneum is also a *locus minoris resistentiæ*. Injuries which are so slight as to be innocuous to the adult may produce peritonitis in young children. I believe that peritonitis in young children follows very often injuries so slight that the child never complains of them. I am firmly convinced that the so-called idiopathic peritonitis always follows a lesion of greater or less severity. Severe strainings at stool, blows upon the abdomen producing bruising of the intestines, parietal or visceral peritoneum or mesentery may produce it. Comparatively slight violence exerted upon the stomach when full,—and we all know how disproportionately prominent the distended stomach in young children is,—may give rise to peritonitis. Very slight injuries to other viscera and especially the liver, may give rise to the disease. The bruising may be so slight as to leave no trace which is visible post-mortem, and yet be sufficient to light up general peritonitis. A bruise over the distended bladder, or if the bladder be not bruised, a wrench of its peritoneal attachments incidental to a fall, may give rise to the disease.

A point which I desire to again emphasize is the disproportionate size and weight of the abdominal contents in young children, as contrasted with the natural provisions for their protection. As a corollary of this point, I venture the assertion that falls and jars may in children produce concussion of the abdominal contents with resultant strain (with or without slight rupture), of those retentive ligaments which are either derived from or invested by the peritoneum. There is certainly in young children considerable disproportion between the strength of these retentive ligaments and the weight and dimensions of the organs which they are intended to support.

A cause of peritonitis in children, which I believe will in the years to come be more frequently recognized, is inflammatory affections in the region of the cæcum. I believe that typhlitis and perityphlitis, due to enteroliths or other foreign bodies in the vermiform appendix, constitute one of the most frequent causes of so-called idiopathic peritonitis in young children. The reason, it seems to me, that this is not more frequently recognized is the fact that in children the disease runs a very rapid course, has a more pronounced tendency to general extension, and kills the little patient before those tardy evidences of localized inflammation and suppuration are recognized by the physician. How frequently we overlook cases of perityphlitis in the adult, treating them perhaps for typhoid fever or some other disease for days or perhaps weeks before we are enabled to make a positive diagnosis. It is all very well for the surgeon who is called in at the eleventh hour, to criticise the physician for failing to discover the pathognomonic induration in the ileo-cæcal region at an earlier day, but there is a question in my mind whether the surgeon himself in many instances could have done any better. With a full realization of the possibilities of error in the differentiation of typhoid and perityphlitis, I will confess that I have myself remained in doubt for days at a time, in cases in which I afterwards operated. If, then, we make such mistakes in the case of the adult, how much more likely are we to overlook until too late, localized inflammation in the child.

The disease begins abruptly, extends quickly, and within a very few hours perhaps we may have an enormously distended abdomen and all of those physical conditions which absolutely preclude that careful and thorough examination which might insure an accurate diagnosis. Often, in my opinion, the little patient will die of acute general peritonitis which has originated in perityphlitic inflammation long before an adult would perish under the same conditions. The formation of lymph, plastic material, and protective adhesions does not occur in the child because of the rapid extension of the inflammation. The child dies un-

operated on, and the case is recorded as another sad illustration of the fatality of idiopathic peritonitis in children. Authorities are united in the opinion that pus is rapidly and almost invariably formed in the peritoneal cavity in children. As already stated, a number of cases of recovery have occurred in which the pus escaped spontaneously. Under such circumstances the chances of life of the patient are entirely dependent upon the caprice of nature. If the pus escapes early enough or burrows in a favorable direction the patient may recover. If nature is unkind, death results.

In a general description of perityphlitis, Drs. E. W. Lee and J. B. Murphy, well known and competent surgeons of Chicago, concisely state the situation as follows: "Are we doing our duty to our patients by allowing them to take such chances? Why should pus in this locality be allowed unaided to find its favorable or unfavorable exit, in contradistinction to the well established rule to properly aid its escape in all other parts of the body where accessible? Who has not seen a similar case to this? The patient is taken suddenly ill, complains of pain in the abdomen; has vomiting, a rapid, feeble pulse, and a pinched, anxious expression of countenance. Examination reveals the abdomen to be uniformly distended and sensitive—in short, with all the symptoms of acute peritonitis, usually terminating fatally on the third or fourth day. *Were we permitted to make autopsies on all of the cases presenting the above history we would find that a large percentage of them were produced by the rupture of a perityphlitic abscess into the peritoneal cavity.*"

I will apply these remarks especially to cases of peritonitis in children, and I believe that I am warranted in asserting that in a large proportion of cases of fatal so-called idiopathic peritonitis in children, we would find, were we permitted to make an autopsy, that the disease had originated in perityphlitic inflammation. Rarely perhaps would we find the inflammation to be secondary to an abscess which had ruptured. To present my ideas more concisely, I believe that many cases of peritonitis in children are due to perityphlitic inflammations which are similar to those occurring in the adult, with the exception that in the child they are followed immediately by acute general peritonitis, while in the adult intermediary changes about the cæcum occur. In cases of traumatic origin, the site of the injury might escape observation because of the rapidity with which ecchymosis had disappeared.

Regarding the dependence of peritonitis in children upon slight traumatism, I have in my own limited experience met with a number of cases which were supposed to be idiopathic, but in which careful inquiry elicited a history of slight traumatism. I recall a case at the present moment of a child in the neighborhood, who was not under my care, who died of what a number of competent physicians termed idiopathic peritonitis. My wife, who was interested in the little one, was discussing the case with me one evening, and upon my expressing my belief that the child must have been injured in some way, exclaimed: "Now I remember, the little girl was playing with some of the other children in front of our house a day or so before she was taken sick, and I saw one of the other children push her down. She fell with her stomach across a curb-stone. She got up, cried for a few moments, and then went about her play as if nothing had happened."

The second case, which came under my observation in consultation, was pronounced idiopathic by two competent physicians; but careful inquiry among the playmates of the boy revealed the fact that he had injured himself by jumping from the roof of a shed two days before he came ill. As his mother had forbidden his climbing upon the shed, he had concealed the fact of the injury. This concealment on the part of young children through dread of parental sternness is in my estimation a frequent cause of obscurity in the etiology of peritonitis.

Still a third case. I was called by Dr. G. W. Reynolds, of Chicago, to see a case of peritonitis from some unknown cause, and found a child of 5 years of age already *in extremis*. On inquiry I found that the child had recently been presented with a velocipede from which he had fallen several times. He had hurt himself slightly, but not severely enough to attract attention on the part of his parents.

In this case, as in the preceding, I attributed the peritonitis to concussion of the abdominal contents. I have notes of several other cases of a like character, but will not burden the Section with their recital.

The treatment of acute peritonitis is undergoing a pronounced change. Indeed, the transition from narcotic rontinism bids fair to bring the profession to the opposite extreme. The free administration of laxatives, especially those of a saline character, is now being advocated in some quarters quite strenuously. This is going to the opposite extreme with a vengeance. Once again, there seems to be a tendency on the part of the profession toward indiscrimination in the proper selection of cases. Lawson Tait and Greig Smith openly advocate saline cathartics in the treatment of peritonitis of a surgical character. Bantock, however, opposes this. It is not my intention however to discuss the merits and demerits of medical treatment, as my paper is already spinning out to an unwarrantable length.

The surgical treatment of peritonitis is to my mind the most important consideration in connection with this disease. The trite aphorism that "history repeats itself" is well illustrated in the case of peritonitis. Erasistratus and Soranus ages

ago several times cut into the peritoneal cavity in the inguinal region to evacuate pus accumulated in the abdomen. From this time, however, until 1735 a period of surgical horror of the abdominal cavity existed, surgeons being afraid to touch the peritoneum.

In 1735 Petit (*fils*) advocated operation for peritonitis. In 1737 he operated upon cases of traumatic peritonitis, with favorable results. He was followed in 1748 by Garengeot. Chomel advised operation to permit the escape of effusion after the subsidence of acute symptoms. In 1846 Guerin advised copious irrigation of the peritoneal cavity with warm water in generalized puerperal peritonitis, suggesting the removal of effused fluid by aspiration and the injection of warm water until the liquid returned clear. He advised an operation at the supervention of meteorism. In 1861 Marten[9] advised the opening of the abdomen with the knife, especially in peritonitis due to pathological perforations. In 1865 Keith[10] operated upon an ovarian cyst in a patient suffering from acute peritonitis; recovery followed. In 1876 Kaiser[11] reported several cases of simple purulent and puerperal peritonitis in which operation proved successful. Puerperal peritonitis has several times been surgically treated with good results. Traumatic peritonitis has frequently been treated by surgical interference since the modern works of Vincent-Bouilly, 1883, and Chavasse, 1885. Prior to 1887 Lawson Tait had already operated upon nearly fifty cases of peritonitis of all kinds. Since that date he has operated upon many others. He says distinctly: "Whenever I find myself in the presence of localized or generalized peritonitis, whatever may be the cause, I open the abdomen and treat the peritoneum according to the indications furnished by actual inspection. Peritonitis is, in abdominal affections, a most powerful indication for surgical interference."

It has been shown that a comparatively slight exploratory incision will often suffice to bring about a favorable result.

In concluding the general history of the surgical treatment of peritonitis, I feel safe in asserting that it is a modern procedure which is rapidly gaining favor all over the world.

I will now discuss briefly what appear to me to be the principal arguments in favor of early operative interference in peritonitis, especially in the grave forms of so-called idiopathic peritonitis, in children and in traumatic peritonitis under all circumstances, but more especially where the inflammation is generalized, or has resulted in the local accumulation of pus. An important point in considering the surgical treatment of peritonitis is the analogy of the peritoneal membrane to the pleura, and other serous membranes to synovial structures. Inflammations of these tissues are, as is well known, extremely painful and disproportionately depressant. Much of the pain and depression is incidental to distension of the sensitive membrane by the accumulated products of inflammation. How frequently a slight surgical procedure will secure relief from the most intense agony in such conditions! Puncture of the anterior chamber of the eye in serous iritis; puncture of the tunica vaginalis in cases of epididymitis; incision of the tunica albuginea in orchitis; aspiration of the thoracic cavity in effusive pleurisy, are all familiar illustrations of this surgical principle. Relief of tension is the only measure which in such cases will produce rest. The more intimately associated the affected membrane with the sympathetic nervous system and with the organs of vegetative life, the more severe the agony and the more pronounced the resulting depression. Applying these principles, as we all do, to inflammation of other structures, why should we not apply them to peritonitis? What membrane of the body is more delicate, more sensitive, more important in its physiological functions, more intimately associated with vital organs, more intimately associated with the lymphatic system, and, most important of all, so intimately associated with the sympathetic ganglia, than is the peritoneum? Taking these things into consideration, is there any wonder that inflammation of so fragile a structure produces such a disproportionate degree of vital depression?

Careful clinical observation has shown us that *pari passu* with the development of meteorism and distension of the abdomen by fluid products of inflammation, we have a pronounced increase in the depression of the powers of life. Not only does inflammation of the peritoneum *per se* produce reflex inhibition of the cardiac ganglia, but incidentally to meteorism and effusion there occurs a direct mechanical interference with the action of the heart. Does it not seem, gentlemen, that the first indication in a case of peritonitis is the relief of pressure and incidentally the removal of gas, fluid and foreign bodies?

So profound is the influence of abdominal distension upon cardiac action that we are apt to be misled in our judgment as to the wisdom of an operation. Many cases that seem too far gone to warrant an operation may recover if the depressing effects of tension upon the peritoneum and abdominal organs and the mechanical interference incidental of meteorism are removed by operation. So simple an operation as aspiration of the intestines will often produce an almost immediate relief from pain and a decided and unmistakable improvement in the character of the pulse.

I would like to ask the members of this Section whether there is, in their estimation, any pos-

[9] "Surgical Treatment of Peritonitis," Virchow's Archives, 29, p. 530.
[10] Lancet, 1865, vol. xi, p. 36.
[11] Deutsche Arch. f. Klin. Med., 1876, 17, p. 74.

sible objection to operation in cases of peritonitis. The indications for the operation are pain; contraindications are *nil*. Should we hesitate to interfere with the peritoneum, which can under any circumstances be interfered with, providing we can prevent inflammation and sepsis? Should we hesitate, I say, when inflammation is already present and the conditions for sepsis already exist, and when, moreover, the only possible way to avoid sepsis is to remove the products of inflammation, or such foreign materials as may be responsible for the condition present? I do not believe that judicious operation will in any case lessen the prospect of recovery. I believe, further, that delay in most cases impairs the chances of the patient.

In operating, especially in children, it is best to be conservative. It is possible to evacuate purulent and gaseous matters without superadding to the shock of the peritonitis that of an extensive operation. A small exploratory incision, with a flushing out of the peritoneal cavity and a thorough washing of the matted coils of intestine with warm water, either plain, slightly saline, or impregnated with boracic acid, will, in my estimation, relieve tension, favor asepsis, and save life in many cases. While the operation should be done early where practicable, it is my belief that there are few cases in which the operation is not indicated, providing the patient is not already *in articulo mortis*.

Since becoming converted to this view my experience has been limited to a single case, which I will briefly recount.

Case 1.—This was the case of a girl, 7 years of age, who fell against a table, injuring the abdomen slightly. She made very little complaint, and it was not supposed that the injury was of any importance. On the fourth day peritonitis developed and ran a very rapid course. The child, however, was strong and vigorous, and although considerably prostrated the case seemed an exceptionally favorable one for surgical interference. On the third day I proposed operation, which was consented to. I opened the abdomen in the median line by a small exploratory incision 2½ inches in length, punctured the intestine with an exploring needle at all accessible points, and flushed out the abdominal cavity with warm water containing a small amount of boracic acid. I inserted a small drainage tube and stitched the incision about it and dressed the wound antiseptically. The operation of flushing was repeated on three successive days, after which time the drainage tube was removed and the wound allowed to heal, which it did perfectly. Relief from the operation was immediate, and the suffering of the patient was at no time thereafter severe. After the operation a full half ounce of Epsom salts was administered, which resulted in very profuse catharsis. I could see no possible objection to this procedure, and I think that the recovery of the patient was partly attributable to it. It certainly appears to me logical to apply, where possible, the principle of depletion to inflammations of the peritoneum. This is best secured by salines. I do not wish to be understood however as advocating the saline treatment as a routine measure.

In conclusion I will formulate my views of acute peritonitis as follows:

1. I do not believe in the existence of acute idiopathic primary peritonitis.

2. The majority of cases of so-called idiopathic peritonitis in children will be found, upon inquiry, to be traumatic.

3. Slight injuries of the abdominal contents are relatively more dangerous in children than in adults.

4. Acute peritonitis in children, while apparently idiopathic, is often secondary to perityphlitic inflammation, which runs a rapid course and extends to the general peritoneum without the intervention of appreciable local changes.

5. The profound prostration and cardiac inhibition characteristic of peritonitis are in a great measure incidental (1) to tension of the peritoneum produced by inflammatory products, with a consequent reflex inhibition of the heart, and (2) mechanical interference with the heart's action.

6. Surgical interference is indicated in all severe cases of general peritonitis and in cases of localized suppurative inflammation, or in cases of perityphlitic origin, whether due to foreign bodies or not.

7. There is every indication present for operation, and no logical objection to it. The operation is almost invariably palliative, if not curative.

8. Operation in no sense impairs the chances of recovery. *Per contra*, it enhances them to a great degree.

9. No case should be allowed to die without operation, unless already *in articulo mortis*.

10. It is not necessary to make a large incision, excepting in cases in which perityphlitic abscess is known to exist, which is rarely the case in children. If perityphlitic abscess exist and is recognized before operation, the incision should be made at the most favorable point, which in the majority of cases is the typical line for ligation of the common iliac, as pointed out by Murphy and Lee. In by far the majority of cases in children a simple median exploratory incision, with flushing of the abdominal cavity, is sufficient.

NOTE.—The discussion following the reading of this paper suggested to me the possibility of my views being misinterpreted. I do not condemn the judicious use of opium, nor would I recommend operation in all cases of peritonitis. My paper bears directly upon fulminant attacks, and those which, although less acute, are resistant to ordinary measures of treatment.

THE CONTINUOUS SIDE STITCH METHOD FOR WOUNDS OF THE INTESTINE.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890

BY C. L. LEWIS, M.D.,

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During the summer of 1889, while house-surgeon of Bellevue Hospital, I had the opportunity of seeing several cases of penetrating gun-shot wounds of the abdomen, complicated by wounds of the intestine and other viscera. I noticed that the operators always used the interrupted method of closing the wounds of the peritoneum, thus requiring considerable time in placing each stitch, in tying each stitch, and in the subsequent threading required. To that end, you will allow me to state, that I have assisted in a laparo-enterotomy, in which it required the entire attention of an assistant to care for the threading. I have also noticed that nearly, if not all the sutures employed to appose serous surfaces, have the following objections brought against them: 1. That they are interrupted and do not hold the surfaces in close and even apposition. 2. That the tension of each stitch is placed upon the width of a thread, and in consequence liable to cut through the intervening tissues, thereby causing serious results; and 3, but by no means the least objection, that the time required to place them, jeopardizes the life of the patient.

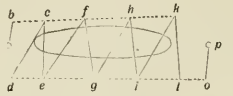
We well know that the crushing and tearing of the various abdominal organs, met with in injuries to the peritoneal cavity is accompanied by profound shock, and that minutes to a man in this state are golden, and must not be wasted. Taking, for the basis of my experimental researches, the faults I have depicted and perfecting each error found therein, I believe I am enabled to place before you to-day a continuous suture which will perform with more perfection and in less time, the results required of other peritoneal sutures. That this suture meets all the requirements necessary, for the inversion of the divided edges of peritoneum; for the close and even apposition of these inverted edges, and for the rapid completion of an operation, which has, until lately, required considerable time, has been accorded me on various occasions. It is continuous and easy to execute. The tension, instead of being made upon the width of a single thread, is made upon tissues of from one-eighth to one-quarter of an inch by means of a side stitch. How much more rational it is to make the tension from a broad stitch instead of the Lembert stitch, can be, and will be shown later. It holds the peritoneal surfaces in close and even apposition, and is adapted to wounds of the hollow abdominal and pelvic organs, such as the intestine stomach, bladder, etc. It is also adapted to the complete resection of the intestine and as our attention has so lately been called to that particular organ and operation, I have performed the resections with excellent results. These will be referred to later. The stitches run along the side of, as well as across the wound, and in its completed state, the peritoneal surfaces, which are inverted, are supported by side pillows of silk, lying in the muscular coat, whilst the exterior shows cross and oblique retention threads. In the suture of any wound, short of a resection, I first fix it with a common Lembert stitch and finish it with the same stitch. In the resection suture, it finishes itself, requiring but one knot.

February 18, 1890, I commenced a series of ten[1] experiments upon the intestines of dogs. All of my operations, but the first, were resections, the first being a suture for a wound, involving two-thirds of the calibre of the gut. These experiments were conducted in the Physiological Laboratory of the College of Physicians and Surgeons, of New York City. My first animal did perfectly well, and a subsequent examination showed a beautiful result with no stenosis or narrowing of the calibræ. My method of performing this operation of resection is as follows: 1. Taking the intestine at point of operation I squeeze its contents into the proximal and distal parts, by a careful stripping between thumb and fore finger on either side of site of operation, now placing them in the hands of an assistant, who also serves to hold the intestine steadily. I now take a pair of scissors and cut out a portion of gut, care being taken that the incision is made at right angles to the long axis of the intestine. Why? For the simple reason that the arteries, furnished by the mesentery, runs around the gut, and not, as many suppose, parallel to its long axis, and in so doing you do not cause excessive hæmorrhage. I rarely tie more than two arteries in a resection, and those two are found at the junction of the divided intestine and its mesentery. Now the intestine is ready for its suture. Threading a round needle with iron dyed silk (small), and having the intestine held, so that corresponding points are in relative position, I apply the continuous side stitch suture, making each stitch from one-fourth to one-eighth of an inch in length, and placing them about one-eighth to one-fourth of an inch from edge of incision. Because of its continuity the suture can be placed rapidly. I may surprise you, when I state that I have sutured a divided intestine in five minutes, and that the animal recovered with a good result. My average operation is done in say seven or eight minutes. What a contrast to the time required in the performance by the Lembert suture.

The drawing shows how simple the suture is.

[1] Ten resections, one death

Commencing at point A we make a simple L stitch; we next enter our needle at point B, and carrying it into the muscular coat, bring it out at point C. We next enter at point D, and in like manner bring it out at point E, opposite point C. In like manner we proceed to the end, drawing each stitch taut, and have them held by a pair of thumb forceps. When the point O is reached, we fix the end by a simple cross stitch. In the resection suture, the L stitches are not required, as you can easily see that points B and O are opposite and can be readily tied.



There are three points to which I would like to direct your attention, viz.: strength, time and facility. *First.* Let us take its strength and discuss it. You will all admit that a thread is more liable to cut through the tissues than a side stitch of one-fourth of an inch, all things being of the same material. I would like to state that experiments have proven that the side stitch suture will stand a strain twice that of the Lembert suture. Resecting two portions of the same intestine and using the same thread. Sutured the one with the Lembert suture and the other with the side stitch suture. My next move was to tie the end of each in succession to a common hand scale, and then to make tension parallel to long axis. The Lembert parted at a point under two and one-half pounds, while the "continuous" parted at four and one-half pounds. The same experiment was repeated with like result. I noticed especially, that the threads in the Lembert cut their way through leaving clean cut incisions, whilst the "continuous" caused a good deal of laceration.

Time.—Your attention is directed to the time saved in using this suture. Naturally, it will take a longer time to appose the ends of a divided intestine by an interrupted suture than by a continuous one. It is my opinion that the importance of the time used in operations, and especially in operations upon the abdominal organs, has been sadly neglected, and the time will come when this most important subject will receive the attention due it. The time *was*, when surgeon, watch in hand, vied with one another in amputation, and the quickest was considered the best. The time *is* when the surgeon, having an over-confidence in his anæsthetic, takes his time, and in many instances, the life of his patient; and the time is (*to come*) when a happy medium will be struck between the reckless haste of our forefathers and the slow and confident manner of to-day. Every time a patient is placed under the influence of an anæsthetic, he is in danger of his life. But how much worse is that poor fellow, who has sustained a wound of the abdominal cavity, apt to succumb to shock through the depressing effect of an anæsthetic combined with the manipulations used in this lengthy operation, your statistics will certainly show.

As I have said, I have done several resections of the intestines of animals within seven minutes from the time of cutting the gut. But I do not mean to convey the idea that a resection of a human intestine could be done in the same time. Perhaps yes, perhaps no. The value of the life of our patient would cry out against any undue haste; but I am convinced from experimental research, that wounds of the intestine, including resection, can be done in a much shorter space of time by using this suture than by any other I know of. The facility with which this suture can be placed can readily be learned from the fact of its being continuous, etc.

Construction.—And now in regard to the subsequent narrowing of the calibre by the inverted edges. Say we place our side stitches one-eighth to one-fourth of an inch from the edge of wound, on drawing the suture taut, a ring of the intestine will be inverted corresponding and varying with the distance of the side stitches from edge of wound, for the side stitches are approximated. These two rings of gut inside the intestinal canal are approximated by silk rings, lying in the muscular wall of the gut, and therefore antiseptic. The silk rings are held together by the cross and oblique retention threads, thus giving you a miniature Abbey ring, which has the advantage of being antiseptic and in not perforating the walls of the intestine. The tighter you draw your stitches the closer the side pillows are approximated, and the greater the pressure against the peritoneal and muscular coats, now in course of resolution. This intra-enteric ring of gut is thrown off in part and cicatrization takes place in the mucous coat. I have specimens which require close examination to detect site of operation, both exteriorly and interiorly. That there is some narrowing of the lumen I grant, but I do not believe there is a tendency to obstruction and stenosis.

In summing up the points of superiority I have claimed for this suture and this method of resection, I have this to say, I would have no scruples in using it in the human abdomen, that I believe its strength has been fully proven; that its efficiency has been demonstrated, and that its ease of execution has been tested and found superior. The fact of it combining the points of superiority in strength of its ease in execution and of the rapidity with which it can be applied, I am sure, will the more commend it to your judgment when it has been successfully applied by yourselves.

When I commenced my operations, I applied an elaborate dressing to the wounds of the animals, but my experience shortly showed me, that a simple covering of iodoform collodion sufficed. In regard to the resection of a corresponding triangular piece of mesentery, I will state for your edification, that the only animal that did badly, was the one in which I cut this piece of mesentery. I do not believe that an intestine will become gangrenous simply because it has not been divided, exactly at right angles to the long axis, but I do believe, that this erroneous opinion has been formed from cases of gangrene, caused by a resection, in which the blood supply has been materially lessened by taking out a part of the mesentery.

THE USE OF POWDERED JEQUIRITY IN CERTAIN AFFECTIONS OF THE EYE.

Read in the Section of Ophthalmology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY W. CHEATHAM, M.D.,

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When the use of jequirity was first brought to the attention of the medical profession, it was, like most good remedies, much abused. I think, though, that the pendulum has now swung too far the other way, since several articles on the subject of its dangers to the cornea, etc., have appeared. Consequently I think it has not yet taken its proper place as a remedy for pannus, with or without trachoma, or papillary hypertrophy.

I have used jequirity in many of those conditions advised against by most men who have written on the subject. I do not use the infusion for several reasons, of which I will speak directly; but I use instead an impalpable powder prepared by Mr. J. A. Flexner, a pharmacist of Louisville, Ky. This powder I have had sent to all points of the compass, and have never received anything but the best results from its use.

Why should the powdered jequirity be better than the infusion? I believe that the powder can if placed in a dry place be kept indefinitely, whereas infusions, as we know, change rapidly. The action of the infusion cannot be confined; it will pass even into the tear duct and down into the nose, while the powder produces the false membrane only where you apply it. Indeed you can, by applying the powder carefully, confine its action to a spot as small as a pin head; and then the action of the powder is, I think, much more thorough than that of the infusion.

If jequirity does produce corneal ulceration (which I doubt, for how few cases of severe trachoma but that have ulcerative keratitis, cases in which jequirity has not been used), the powder is less liable to do this than the infusion.

Some of these statements may appear a little strange, yet they are the result of much experience, and what I ask is that those who have not used the powder give it a trial before commenting upon them.

Again, I have used the powdered jequirity in one or two cases in which there was extensive muco-purulent secretion, with success.

The cases in which I have used this remedy, a few of which I will now report, are not picked ones. They are, moreover, cases in which all other treatment except inoculation of gonorrhœal secretion, or conjunctival circumcision, had been tried.

The fact is I know of no condition, in which there is pannus, unless it be a large slough of cornea, with or without prolapse of iris, in which I would hesitate to use the pulverized jequirity, providing the usual remedies had failed.

Mr. D., extensive opacities of cornea with pannus: V. R. = $\frac{2}{6\,0\,0}$, V. L. = $\frac{1\,8}{2\,0\,0}$, time of treatment two and one half months, results, V. R. = $\frac{1\,6}{2\,0\,0}$, V. L. = $\frac{1\,8}{2\,0\,0}$.

Chas. M., extensive opacities of cornea: V. R. = $\frac{2}{6\,0\,0}$, V. L. = $\frac{2}{6\,0\,0}$. Time of treatment two months, result, V. R. = $\frac{1\,6}{2\,0\,0}$, V. L. = $\frac{1\,6}{2\,0\,0}$.

Belle McG., V. = perception of light: After five applications, V. = $\frac{1\,2}{2\,0\,0}$.

Sylvester D., V. R. = perception of light, V. L. = $\frac{2}{2\,0\,0}$. Five applications. V. R. = $\frac{2\,0}{4\,0}$, V. L. = $\frac{2\,0}{4\,0}$.

Thos. C., V. from $\frac{2}{2\,0\,0}$ to $\frac{2\,0}{7\,0\,0}$ one eye, and $\frac{2\,0}{2\,0\,0}$ the other.

Mrs. K., V. = perception of light. She writes now that she can see as well as she ever could.

I saw at the meeting of our State Medical Society last week a physician who had to be led to my office, and on whose lids I had used the powdered jequirity. He stated that vision was now perfect.

The reaction which follows the use of the powdered jequirity sets in from two to four hours after its application; the pain, as you know, is very great; for this I use nothing if it can possibly be stood; if not, hot carbolized water, or hot water with boric acid in it, soon allays it.

I have had people who were led into the office blind, come by themselves in four or five days after the use of the jequirity. I have so little fear of it, that in a certain neighborhood in my State where there is a great deal of trachoma with pannus, a patient from there who had been relieved by its use, took some of the powder home with him, and used it in the eyes of many of his poor neighbors, with none but the happiest results. Of course, pulverized jequirity is not a "cure-all," but there are many cases of so-called hopeless blindness from pannus in this country in which all other remedies have failed, which I believe can be given useful vision by the use of jequirity. Indeed, I believe many of these cases

have not been relieved because the physician has read of the dangers of the infusion of jequirity and has not heard of the powder, which, as I have before stated, I believe is free from danger.

This fear is the only apology I have to offer for reading a paper on this old and much written of subject, before this Section of the American Medical Association.

A DANGER IN THE USE OF JEQUIRITY HERETOFORE UNMENTIONED.

Read in the Section of Ophthalmology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY T. E. MURRELL, M.D.,
OF LITTLE ROCK, ARK.

I was one of the first to combat Sattler's theory of the bacterial origin of jequiritic conjunctivitis. I was making experiments with the bean, clinically and microscopically, about the time this theory was promulgated, and I had reasons for non-concurring. They were: First, the fresh infusion of jequirity was found to be more powerful than the old, and no bacteria could ever be found in the fresh infusion; second, in old infusions of the other leguminosæ similar bacteria were discovered, and in greater numbers than in the jequiritic infusion, and yet they were without effect on the conjunctiva. It is now well agreed that the peculiar property of jequirity resides in the bean and is not derived from any other source. Strange to say, however, this principle has never been isolated by the chemist. The infusion being perfectly bland, only possessing in a marked degree the narcotic odor belonging to the leguminosæ, it is a singular phenomenon that such striking changes should be produced in the vital functions of a mucous membrane by its topical application. Its tendency to clear out infiltrations and to dissolve adventitious structures renders it a remedy of great value in certain conditions of the eye.

While much difference of opinion exists as to its real merit as a therapeutic agent, and as to its proper field of usefulness, there can be no question as to its marked beneficial effect in some cases. We possess nothing superior for clearing corneæ densely opaque from inveterate pannus. A remedy so powerful is reasonably not without danger. Extensive posterior synechiæ have been discovered after clearing the cornea by its use, thus showing the danger to which the iris is exposed by its action; hence it is well to always guard against this accident by the free use of atropine so long as the artificially produced conjunctivitis continues. Ulceration of the cornea has also followed its action in improperly selected cases, but with reasonable care and judgment this danger can be reduced to a minimum.

Those who deal much with long standing and badly treated cases of granular conjunctivitis will now and then find one suitable for the application of jequirity. As ophthalmic surgeon to the Arkansas School for the Blind I meet some such cases annually, and the results, I would also say parenthetically, are sometimes most gratifying.

As is well known, collyria dropped in the eyes often run through the tear passages and are tasted in the mouth. It occurred to me that the use of the infusion of jequirity in the eye might, by entering the lachrymal sac and nasal duct, excite similar inflammation in these parts, or in the nose even, as in the eye.

Such apprehensions have within the last year been fulfilled in three instances; two of them occurring in a young lady, involving the tear passages of both eyes, and the other in a young man in whom only the right tear passages were so affected. In each case the jequirity was used in a 2 per cent. infusion repeatedly dropped in the eyes with a pipette until severe inflammation ensued, which was then allowed to run its course unmolested. Each of these patients was carried through a second course of the jequirity treatment, and some time after recovering from the last course of treatment I found the young lady had a dacryocystitis of both lachrymal sacs, and the young man of the right sac only. Delaying in operating to overcome the strictures in the nasal ducts, acute phlegmon developed in the left sac of the young lady and in the right sac of the young man. The cases were treated in the usual way, the phlegmons opened externally, and when the swelling had sufficiently subsided the canaliculi were opened and afterwards the strictures overcome by the use of Bowman's probes, and the cases finally cured. There had never been any symptoms of trouble with the tear passages prior to the use of the jequirity, and neither case had nasal trouble; hence the inference is clear that we here had jequiritic inflammation of the mucous membrane lining the lachrymal sac and nasal duct, leading to stricture of the latter with its usual sequelæ.

DR. FROTHINGHAM said: I have been much interested in the paper and the discussion which it has elicited. I have no personal experience with the use of jequirity, and for that reason am, perhaps, more interested in hearing the experience of others. I was deterred from the use of this remedy by the disastrous effects that I saw reported by competent and reliable men soon after its introduction. To cite a single example, we may recall the published experience of Dr. Knapp of New York. Following as near as possible the rules for its use as originally given by De Wecker, he had unpleasant results. He then wrote Dr. De Wecker for an exact description of the class of cases in which it was useful, and to direct *just* how it should be used. De Wecker gave him explicit directions for its use. Dr. Knapp used it in accordance with these directions. As a re-

sult he very nearly lost both eyes of a patient he thus treated, and that, too, in his own hospital, where the patient was under his direct observation and control. I have seen more patients that have been injured by jequirity than I have seen benefited by its use, notwithstanding occasional brilliant results may be obtained through its action. One distressing case came to my notice. The case was that of the wife of a wealthy ranchman in Nevada. She had trachoma, but could see quite well with either eye. An Eastern oculist became the guest of her husband while on a Western tour. He treated her during his visit, and on his return home sent some jequirity with full directions for its use. It excited a severe inflammation, and both eyes were lost by panophthalmitis. She consulted first an oculist at Salt Lake City, and then came to me. Her case was that of hopeless blindness. It is this excessive inflammatory reaction, reported from its early use, that deterred me from resorting to it in practice. I felt that a remedy must be unsafe, and occasionally uncontrollable, which in a few hours after its application would cause the lids to be so swollen as to completely close the eyes, produce intense constitutional reaction, with a temperature sometimes reaching 104°. I have thought it prudent to wait until rules could be formulated for its use so that any practitioner could apply it with confidence. I am always suspicious of a remedy which, though some may use with uniform success, others, though faithfully following directions, cannot use without frequent disasters. As yet I have seen no sufficient evidence to establish the claim of jequirity as a safe remedy, and I regard its application as limited to a few peculiar cases of extreme pannus in which other and safer remedies have failed to afford relief.

Dr. X. C. Scott, of Ohio, said: I am surprised at the remarks of my good friend from Michigan (Dr. Frothingham), for his experience is exactly opposite to mine. In a large number of cases the results have been most satisfactory. In only two cases has there been slight ulceration of the cornea, and these two cases were cured without leaving any trace of opacity behind. Jequirity is one of the greatest boons to patients suffering from trachoma with pannus, for with this remedy these cases can be cured by from one-fourth to one-third of the time required by the former and usual mode of treatment. The plan of treatment seems much preferable to the stumpy tooth brush recommended by the gentleman from Tennessee (Dr. Savage). In the treatment of these cases I have used an infusion of the bean to which has been added some boracic acid. It should not be trusted in the hands of the patients to use, but should be applied by the surgeon himself. With the proper employment of jequirity cases of pannus can be cured that cannot be helped by any other method. After the acute inflammatory symptoms have disappeared I assist the good effects obtained from jequirity by continuing a mild astringent until the cure is completed.

Dr. Frank Trester Smith, of Chattanooga, suggested that in the use of new remedies cases be taken where the condition is nearly the same in both eyes, and that the remedy be used in one eye and standard remedies be used in the other; then we would have something on which to base conclusions. He had observed the cases of Knapp and was perhaps prejudiced against jequirity, and thought that a remedy that had produced so much damage should be used only by those well qualified to treat all cases of eye disease. It certainly should not be used by the general practitioner.

Dr. Minney: Is your success so much greater, Drs. Cheatham and Scott, since your use of jequirity, than in the same class of cases in your practice before its use?

Dr. Murrell: Dr. Mittendorf used powdered jequirity seven or eight years ago in proof of the power residing in the bean and not due to bacteria in the infusion. Iritis unquestionably follows its use. Never had iritis when he used atropine at the same time.

Dr. Fulton said: With such a dangerous remedy as jequirity it is not safe to permit the patient to use it except under observation of an oculist. That the most brilliant results he had ever experienced in ophthalmology had been produced by the judicious application of this remedy. It should never be applied when there is any mucous or muco-purulent discharge.

Dr. Savage said: On the papers read by Drs. Cheatham and Murrell I want to speak of a plan of treatment which may be resorted to at a time when none of us would dare use jequirity, viz.: when there is no pannus. But whether the trachomatous condition is recent or old the conjunctiva may be cocainized and the brush treatment applied. I follow the Roumanian plan of preparing the brush. I buy an ordinary tooth brush of good quality and cut the bristles at the end of the brush to the length of one-eighth of an inch. With these short bristles I plow out the trachomatous bodies and smooth down the enlarged papilla. Very simple after-treatment is needed. This plan is far superior to either the use of jequirity, sulphate of copper or nitrate of silver. My experience with the brush, however, covers only twelve or fifteen cases.

Dr. Tilley, of Chicago, said he was glad that Dr. Cheatham brought forward the subject of trachoma, as he thought that jequirity was an abused remedy. He had never seen powder so well prepared as the sample presented. Relative to the statement of Dr. Murrell that the active principle of the jequirity bean had never been isolated, this was a mistake—that according to his recollection it was reported in *Merck's Bulletin;* also that Samuelson, of Copenhagen, had isolated it in his

preparations for a paper before the International Medical Congress at Copenhagen.

DR. J. H. THOMPSON said: If pannus is dependent upon the deposit of inflammatory material in the substance of the cornea under Bowman's membrane, I cannot see how jequirity inflammation can clear up totally that membrane. Pannus will very frequently clear up under copper, even when there is no progressive disease on the lids (cicatricial transformation). The drug is excellent to alter the elements of an inflammation of the conjunctiva (chronic blenorrhœa, trachoma) so that the usual remedies may be efficient, when before neither nitrate of silver or copper would have any effect.

In answer to questions asked Dr Cheatham said: The inflammation resulting from the use of jequirity powder is controllable by means of hot carbolized water baths. By their use the inflammation can be checked in a short time. Success from the use of jequirity powder in pannus is better than from other treatment, as it is more rapid; it cures cases in which all other treatment has failed; many cases have been cured by its use which would have been blind all their lives but for it. I make a second application if needed, as soon as all reaction from the first has subsided.

DR. WM. DICKINSON, of St. Louis, inquired the mode of preparation of the specimen of powdered jequirity presented, and was told to pulverize the bean and sift it several times. He went on to say that he had used jequirity with most excellent results; in no cases had he experienced ill consequences.

DR. POLLAK, of St. Louis, in about 150 successive cases several years since, reported that in only one case did serious results follow. It is a most potent agent and is by no means to be employed by laymen nor by any one who is not well informed in its use. He makes an aqueous solution, and after twenty-four hours this is strained or filtered and used intelligently by the ophthalmic surgeon himself.

DR. A. R. BAKER, of Cleveland, O., said: As this seems to be an experience meeting I wish to put my experience in the use of jequirity on record. Soon after the introduction of this remedy I met a case of granular lids with pannus. I brushed the lid with jequirity, which resulted in a violent panophthalmitis, and notwithstanding the use of hot water the eye went on to complete destruction. This unfortunate experience has caused me to use the remedy with great care. Yet I have had good results from its use in some cases. One of the most satisfactory was that of a physician who contracted a granular ophthalmia resulting in a dense pannus. In four years he was obliged to give up his practice and spent much time and money, even going abroad for treatment without the least benefit. But since using jequirity he has been able to resume his practice, and enjoys very good vision.

MEDICAL PROGRESS.

THE INFLUENCE OF MENSTRUATION ON LACTATION.—The question whether a menstruating mother should continue to nurse her child, has been answered differently by many writers; some say it alters the quantity of milk, others the quality, and still others both quantity and quality. N. Davis, Vernois and Becquerel and Emil Pfeiffer alone have considered this matter scientifically. SCHLICHTER (*Wien. Klin. Wochenschr.*, ii, 51, 52, 1889; iii, 4-5, 1890), has attempted to add some needed observations in this direction. The analysis of the milk, which consisted of the determination of the fat, casein, total albumen, and total solids, gave in the milk of nine mothers no difference in the quality when menstruating; indeed the differences were less than normally occurred at different periods of the same day.

The children of fifty nursing mothers, who menstruated within two and one-half months of their confinement, were examined as to their weight and general condition, and no material change was found during, or just after the period of menstruation. The author sets forth the results of his observations, as follows: That after the sixth week, menstruation does no harm to to mother or child. Before the sixth week, hæmorrhage or menstruation retards the growth of the child. An outbreak of colic, dyspepsia, or enteritis during menstruation, is to be regarded as a mere coincidence and should not be treated by changing the nurse, but by the usual methods.

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF UROBILINURIA.—HAYEM (*Gaz. Hebd.*, xxxvi) claims the same diagnostic value for urinalysis in diseases of the liver as in diseases of the kidney. While in the latter case we are on the look-out for albuminuric acid, etc., in the other the coloring matters are the ones to be considered. As no urobilin is found in the urine of healthy animals, Hayem concludes that urobilinuria always means a disturbance of the liver. That the condition is so frequently found is due to improper diet and the use of alcohol. The degree of urobilinuria is an index of the gravity of the liver changes. While with light drinkers the quantity of urobilin is small and may completely disappear from the urine, in those of persistent free urobilinuria, with a history of alcoholic excesses, we certainly have to do with a cirrhotic liver. The importance of this symptom is apparent when we think that it occurs early, long before other signs appear.

TREATMENT OF CHRONIC GONORRHŒA.—FLEINER (*München Med. Wochenschr.*, xxxvi, 1889) recommends the following modifications of Unna's ointment sounds: The salve composed

of ℞ Argenti nitratis, 1.0:5.0; cerae florae, 10.0; ol. theobromatis, 100.0, is melted and poured into small moulds made of wax paper or parchment. The steel sound is then heated and passed through the cooling wax. The author claims that this method is both cleanly and convenient. This treatment is only suitable for those cases with little secretion. On the average four to six soundings are sufficient, though in some cases ten or more may be necessary. At least five days should elapse between each sounding, as the treatment causes some irritation. Of forty-one patients treated twenty-eight recovered, eleven greatly improved, and two gave up treatment. In connection with this treatment the author used disinfecting astringent and caustic lotions. In closing, he says that while this combination treatment is useful, it is not all powerful, and occasionally cases will present themselves that resist any and all treatment.

Encephalocele.—In the *Revue de Chirurgie* for April, 1890, Paul Berger describes two very interesting cases of hernia cerebri, of congenital origin. In one case the tumor, which measured 20 centimetres, was successfully removed, and found to consist of integument, subcutaneous tissue, and within that gelatiniform tissue resembling the pia mater and arachnoid. The inner layer presented irregularly distributed nerve elements, mostly fibres. Recovery was rapid, the operation not causing any special disturbance of the health.

The second case was from the practice of M. Périer and was communicated to the Académie de Médecine on the 2d of April, 1890, but not published. The tumor in this case also covered the occiput, pedunculated, and was removed by ligating the cyst, excision, suturing and a simple salol dressing (without drainage). The child lost considerable blood during the operation, but made a quick recovery. An examination of the tumor showed on its inner surface nerve cells and fibres. Cerebellar tissue could be determined by the presence of the corpuscles of Purkinje.

The author presents a valuable *résumé* of the literature regarding the nature, origin and development of these tumors.

An Autopsy in a Case of Traumatic Neurosis.—The vexed question of the pathology of spinal concussion has recently had some light thrown upon it by Bernhardt and Kronthal (*Neurol. Centr.-Bl.*, ix, 1890). A coachman 31 years old hanged himself, who for the previous two years had suffered from a traumatic neurosis, caused by a kick in the epigastrium. The microscopic examination of the spinal cord (alone permitted) showed, throughout the white substance, patches which stained deeper and were richer in neuroglia than the surrounding tissue. The blood vessels of the cord were thickened. From the fact that in a previous case of Kronthal's identical changes were found, they are inclined to attribute great importance to these appearances.

The Pharmacology of Aconite.—Dr. William Murrell, of London, considers commercial aconitine as an uncertain substance from a pharmacological as well as a therapeutical standpoint. In reality, he says, we do not know whether our aconitine is aconitine proper or pseudoaconitine, or japaconitine, or a mixture of all three. English aconite, so called, is at least seventeen times as active as the German, the French being intermediate in strength; but this classification into English, French and German is clearly unreliable and unscientific. It would seem that the use of aconitine is attended with considerable danger, several cases of poisoning have been reported simply from using a stronger aconitine than the prescriber intended. One case, which terminated fatally, happened because the physician was under the impression that the French and German aconitines were identical. Fleming's tincture of aconite root is as poisonous as prussic acid taken drop by drop. The U. S. P. tincture of aconite root is half the strength of Fleming's tincture, and the B. P. tincture is only one-sixth as active as the latter. Murrell prefers to administer aconite by dropping half a drachm of the English tincture into four ounces of water, administering a teaspoonful every quarter of an hour for one hour, and subsequently every hour for six hours, or until the acute symptoms have subsided. He also uses tabloids or triturates in a similar manner. Aconite especially affects the heart—first its ganglia, then its nerves, and lastly its muscular substance. It may also act upon the vagus roots in the medulla. It lowers arterial pressure by depressing the heart's action; it does not affect the vasomotor center or nerves. Aconite is a protoplasmic poison, lowering the action of all nitrogenous tissues; first, of the central nervous system; next, of the nerves; and finally of the muscles. It has a special affinity for the sensory nerves, which is best shown by topical use of the agent in neuralgia.—*The Medical Bulletin.*

Electricity in Influenza.—Dr. J. Worthington, in a communication to the *British Medical Journal*, says: "I wish to place on record the very marked benefit derived by my patients by the use of electricity in the neuralgic and rheumatic forms of the affection. In some cases the relief has been immediate and permanent; the pains in the back, groin and sternum, which people have complained of so much, and which have become more or less chronic and defied treatment, have yielded at once to thirty or forty cells of Leclanché's battery."

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SATURDAY, JUNE 28, 1890.

THE MUTUAL RELATIONS OF GENERAL AND MEDICAL EDUCATION.

Under this head THE JOURNAL last week invited attention to the complaints that have been made from time to time concerning the length of time required for young persons to complete the usual college course for the degree of Bachelor of Arts, and then supplement it by from two to four years of professional study. Allusions were also made to the disposition manifested in some quarters to reduce the length of such college courses from four to three years, while on the other hand, there was a strong disposition in professional circles to demand an addition of one or two years to the time of professional study.

Assuming, as was then stated, that young men should be able to complete both their general and professional education so far as to be ready to enter upon the active duties of their chosen life-work at the age of twenty-three or twenty-four years, it is plain that the curriculum of studies in the preparatory and collegiate courses for the degree of B. A. should be so adjusted that the average student can complete it at the age of twenty years; and in doing so shall have acquired a good degree of mental discipline, and so much knowledge of the origin and uses of language, of mental and moral philosophy, of physics and the natural sciences, and of history and literature, as will constitute a good basis from which to take his departure into any of the non-professional avocations of life; and an equally good basis for commencing the study of any recognized profession.

One of the chief defects of the present preparatory and collegiate courses, is the disproportionate amount of time devoted to the study of the Greek and Latin languages, to the exclusion of other branches of science of more interest and practical utility. These classical languages enter so largely into the composition of those most used by modern nations, that at least, an elementary study of them should constitute a part of every course of liberal education. It is not their exclusion that is desired, but their proper limitation as to the time they shall receive in comparison with that devoted to other branches of knowledge. The time required for obtaining sufficient knowledge of the different branches of medicine to justify the commencement of the active duties of the profession, depends so much on the mental discipline and amount of knowledge previously acquired by the student, that no arbitrary rule can be maintained without doing injustice to many. The average student who has passed through the course of preparatory and collegiate training usually required for the degree of Bachelor of Arts, science or philosophy, if such course has included a good degree of training in physics, chemistry and biology, can enter a medical college with a properly graded curriculum, annual college terms from six to nine months, laboratories for practical work, and hospital facilities for clinical instruction, and can qualify himself fairly well for commencing the active duties of his profession in three years.

But if physics, chemistry and biology have been practically omitted from his previous courses of instruction, or if he comes to the medical college with only the training received in the common or public school, aided perhaps by one, two, or three years in a high school or academy, he cannot qualify himself to enter upon the ordinary duties of the practitioner with justice to himself or to his patients, in less than four years. Therefore, the time required for the study of medicine, instead of being arbitrarily the same for all medical students, should be so far flexible as to adjust itself in some degree to the previous attainments of the student.

The General Medical Council of Great Britain has had this subject under thorough and protracted discussion very recently,[1] and has very judiciously recommended that the time medical

[1] See British Medical Journal, June 7, 1890.

students should spend in some recognized school of medicine should be four years; and a fifth year should be spent in clinical work in a hospital or dispensary or with a recognized practitioner. It was further recommended, however, that the student might spend the *first* of the four years required, at any recognized institution for teaching physics, chemistry and biology; and that any graduate in arts or science, who had given proof of having studied these branches, and of having been examined in them for his degree, should be held to have completed the first year of his medical studies. These recommendations of the General Medical Council regarding the four years of medical college study are eminently just and proper. They give the needed encouragement to more thorough scientific training before commencing the technical study of medicine by giving those who bring to the medical college such training, a gain of one year in time, while those who do not, must gain it in part at least, by devoting the first of the four years to that purpose. A year or two since the Illinois State Board of Health gave formal notice by resolution that after the college term of 1890–91, only such medical colleges would be recognized as in good standing, as should require of the medical student *four* years of study including *three* annual courses of college instruction of not less than six months each. The Board specified no branches of study that the student should take during the first of the four years, neither is he required to be in attendance in any college during that year, and consequently there is no practicable mode of enforcing the requirement or determining whether the student studies medicine an hour a day during that year or not. Any young man or woman can buy or borrow one or two medical books and get some practitioner to certify that he or she commenced to study medicine at a given date, and at the end of the year take the certificate to a medical college and enter as a second year student. It is plain that the Illinois State Board should either adopt substantially the recommendations of the General Medical Council of Great Britain regarding the first of the four years of medical study as stated above, or else repeal their resolution for four years, and be content to enforce more rigidly the present requirement of three years of study and three regular annual courses of medical college instruction of not less than six months each, etc., until the colleges in all parts of the country are brought up, at least, to that standard.

CONCLUSION OF THE FOURTEENTH VOLUME

With this number we reach the conclusion of seven years, in the history of THE JOURNAL.

We think it is no longer a question with any of our readers but that the decision reached seven years ago, to issue the Transactions of the Association in the form of a weekly journal, was timely and wise.

Its success at the first was involved in much uncertainty. Had there been a failure at any point to command the confidence of either the Association or of a generous advertising public, its experiment must surely have ended in failure. Happily a discriminating and eminently conservative Board of Trustees had as their associate an Editor-in-Chief eminent for executive ability and skilled in the department of medical journalism.

In the development of this new enterprise the management of THE JOURNAL could afford to make no mistakes, and so, at the risk of being considered excessively conservative, the Trustees have preferred to move steadily on, assured at each step, that what was proposed could surely be accomplished and that come what would there must be no financial embarrassment. Thus far their efforts have been eminently successful, and never during its history, has it failed to meet every demand at sight. At the conclusion of six years the editorial supervision of THE JOURNAL, at the earnest demand of the former Editor-in-Chief was fully assumed by the Board of Trustees, and was specially committed to the care of the Committee on Management of THE JOURNAL.

Their work during the past year was so far endorsed at Nashville, that the same general oversight and the same special labors are continued.

It will be seen by reference to the list of editorial writers to be found elsewhere in this number, that THE JOURNAL is widely representative of editorial work in this country, and it is the purpose of the Trustees that in this direction the power and value of THE JOURNAL shall be constantly increased.

A few words are due in conclusion as to the publication of original papers presented at the annual meetings. Obviously they cannot all be published at once, else we must return to the old method of issuing them in book form, a method

which after thirty-four years of faithful trial we were glad to abandon.

Nor does it seem to us wise to employ temporarily a large printing force, and to increase THE JOURNAL for a limited period of time to unwonted proportions, and then to so diminish its size as to bring the annual cost within the necessary limits of expenditure.

We are not to forget that a growing constituency of subscribers who are not members of the Association has selected this as their medical journal and a uniformity, not only in size, but a widely and wisely selected medical literature, must be associated with every number of THE JOURNAL to render to them the returns which they have a right to expect. But in order to facilitate the publication of the regular papers, we are happy to announce that with the next issue, the first of a new volume, the condition of the finances is such, that the Trustees feel warranted in making an addition of four pages each week to this particular department. This will not only facilitate the publication of the Association papers, but it will so relieve the pressure upon the columns of THE JOURNAL as to permit the appearance of many valuable articles from other sources, such as in times past we have been obliged, with great regret, to decline.

With thanks to the members of the Association for their very uniform interest in its welfare, and for the courtesies so generously accorded by the medical press of the country, we have to express the earnest conviction that THE JOURNAL is more and more to develop in value, and more and more successfully to subserve the interests of our noble profession.

EDITORIAL NOTES.

WHY SHOULD NOT LADIES TAKE TO PHARMACY.—A daily journal has recently pointed out that pharmacy is now quite open to persons of the female sex, and suggests, what is certainly true, that it is a calling for which their neat touch and delicacy would seem peculiarly to suit them. For a long time there were difficulties in the way, but these have now been overcome, and there is no reason why lady chemists should not commence business, under the patronage—if they can secure it—of the lady doctors.

Quoting the above from the London *Lancet* as applicable to ladies in England, we are led to inquire why the habit has not long ago obtained in this country, and why ladies are not generally employed in this important industry. It cannot surely be said of them that they cannot become competent. In fact we doubt if there be another such field for them, as promising of success as that of pharmacy. They certainly can as quickly and as perfectly command the requisite knowledge, and their deft hands can as accurately combine and as neatly dispense medicines as can the most skilful of gentlemen druggists. We think that our Colleges of Pharmacy should accord to the ladies equal facilities for the attainment of pharmaceutical knowledge, and we believe that it will fall specially within the province of skilled female labor to dispense medicines. We are at a loss to know why a field so inviting has been so long unoccupied by ladies who are seeking to earn by honorable and honest effort a competent livelihood.

SANITATION OF THE CAMPAGNA.—It is reported by cablegram that a syndicate of German capitalists, having $10,000,000 at command, has made overtures to the Italian government to reclaim the Campagna di Roma, on scientific sanitary principles. At present the district is a pestilential and desolate plain, a detriment to the progress of the city, and a standing menace to the health of all who are compelled to visit or reside temporarily in that region; even the hardy peasants are not exempt from the malarial fevers that have their origin in the Pontine Marshes. This district was once well populated and cultivated, and it is thought that by the introduction of modern engineering methods of drainage and irrigation, the Campagna can again be made to blossom as the rose. If that should be done, and Rome again becomes a healthful city, it may in the end, and before many years, become a favorite health resort for winter tourists.

AN "OLDEST" GRADUATE.—Dr. James Tyson writes to the *Medical News*, June 7, that the oldest living graduate of the University of Pennsylvania is Dr. Enoch Fithian, of the class of 1816; he resides at Greenwich, New Jersey. He is probably the senior alumnus of the whole country.

THE MEDIZINISCHE REVUE.—A new fortnightly journal, named as above, is announced to appear at Vienna, under editorial charge of Dr. Adolf Kálay, of Carlsbad. This journal will be

the organ of the balneologists and hydrotherapeutists of Germany and the continent. Professors Renator, Leibreich, Eulenburg, Magnus, Nathan, Sossbach, and Winternitz, and Drs. Ott, Hoffmann, Schott and Frey will assist with their contributions from the various health resorts and clinics.

The Sanitarium at Goerbersdorf.—Dr. Felix Wolff, of Hamburg, will succeed to the management of the Goerbersdorf hospital for diseases of the lungs, in the place of the late Dr. Brehmer, who founded that institution about thirty years ago. Dr. Wolff has been an assistant to Professor Curschmann at the great Hamburg Hospital.

A Pharmacy of Two Drugs.—At one period of the grand march of Stanley's Relief Expedition across Africa, the medical supplies of Surgeon Parke ran very low. He had just two remedies left, namely: pure carbolic acid and permanganate of potash. "Nevertheless," says Stanley, "there were some wonderful recoveries during the halt of Stair's column on the Ituri River in January." Whenever there was a halt, the hardest worked man in the expedition was the surgeon. He not infrequently had a hundred patients daily. There were all kinds of complaints, but the most numerous and most troublesome were the ulcers, and his two antiseptic remedies must have stood him in good stead; for within the period of one month, in camp, he brought the effective strength up from 200 to 280 able-bodied men. Stanley says of his "unrivalled surgeon," Parke, that he loved all his cases, and to him they were all "interesting," despite the odors emitted and the unsightliness of the injured parts or persons. We are glad to note that at the testimonial banquet given to Dr. Parke by the Royal College of Surgeons in Ireland on May 31, he was presented with the Honorary Fellowship of that College; this honor has been granted only forty-nine times and there are only eighteen now living who hold it.

The Pneumonia of Influenza.—Dr. William Pepper, of Philadelphia, addressed the New York Academy of Medicine at its regular session, April 17, on the forms of pneumonia by which epidemic influenza is complicated. In regard to the prevalence of pneumonia in his State, the best information he could give was that the occurrence of influenza during the past winter caused an increase of 100 per cent. Dr. F. C. Shattuck, who has investigated regarding the like conditions at Boston, stated that during December and January, the increase of pneumonia was not much less 200 per cent. as compared with the average during those two months in former years.

Large Estate of Dr. Gull, of London.—The fact that the late Sir William Withey Gull left an estate valued at a third of a million pounds sterling, chiefly acquired by the practice of medicine, seems to have staggered quite a number of newspaper writers in England. The unfavorable comments, however, do not emanate from those who were formerly patients of his, but from those who never put a penny in the pool.

New Hospital at Cooperstown.—The city of Cooperstown, N. Y., has received from an unknown donor the promise of $10,000 towards the establishment of a hospital for that place. The donor, it is stated, suggests the unusual name "the God's Providence" hospital as an appropriate title. The name sounds oddly, and evades the teaching of a lesson that might be profitably taught, if it should bear the name of Man's Improvidence Institution. But he who gives the money should be permitted to give the name also.

An Anti-Premature Burial Society.—The *Medical Record* states that a number of physicians and laymen are about to organize a society having for its object the prevention of premature burial, an occurrence which the promoters of the organization believe to be more common than is generally supposed.

Boston's Streets.—A petition, signed by over one hundred physicians of Boston, was recently submitted to the City Council, protesting against the filthy condition of the streets, and urging immediate remedy before the advent of hot weather.

American Dental Association.—The thirteenth annual session of the American Dental Association will be held at Excelsior Springs, Mo., commencing Tuesday, August 5, at 10 o'clock A.M.

TOPICS OF THE WEEK.

THE MAIN OBJECT.

Is the listening to papers and discussions the end of chief importance in attending a session of the American Medical Association? We think not. Are we not better able to read and comprehend these, to digest and absorb at our leisure what we like of their scientific lore as they appear in the Association JOURNAL, than when they are sprung on us in this hasty fashion, when we may be impressed more by the manner of the speaker than by the soundness of his argument?

We believe that one of the greatest benefits to be derived from such meetings is the acquaintance which we form with those whose names and writings are already familiar to us. There we meet the *men*, and not the writers. We study their learning, their appearance, their very selves, in fact, and the groundwork for a better appreciation of their true worth is thus given us. An acquaintance with the members of this body is no small possession; it is a tangible reality, of which the possessor may well be proud. There are congregated the venerable fathers of medicine and surgery of our country—those who have labored long and earnestly in the great cause of the advancement of the profession, and for the concentration and organization of its forces; and who yet stand in the traces lending their aid with fatherly beneficence. There we see the *workers* of the profession, the men who originate, who record, who develop and formulate the rules and principles of medical and surgical practice, who in their turn, at some future date, will be looked upon as the fathers of the profession—but who, no doubt, will resent a too early application of that term, or its application in too comprehensive a sense.—Editorial, *Weekly Medical Review*.

A CODE OF ETHICS FOR DENTAL COLLEGES.

Probably one of the most pronounced features distinguishing dentists who are members of dental societies from those who are not, has been brought about by the requirements of societies in the matter of ethics. One of the first conditions governing the applicant to any society is that he shall subscribe to a certain Code of Ethics, and the moment he has done that—if done in good faith—he has drawn a decided line of distinction between himself and the army of quacks and charlatans who infest the profession. It is this Code of Ethics always before his mind which presses upon him the necessity for strict professional conduct, and while the spirit of the Code is often transgressed in individual cases, yet the influence upon the profession generally has been immeasurably beneficial.

But what shall we say of our dental colleges? Shall our societies be governed by high ethical standards, and our colleges be left to conduct themselves in a slipshod manner wholly unbecoming professional institutions? A college should be governed by a Code of Ethics at least as stringent as that governing the private practice of any of its faculty.

It is, in fact, more important that a college should be conducted in a strictly professional spirit, than that a society should lay down a rule of procedure for its individual members. While both the college and the society may be termed educational institutions, the former deals with individuals in the formative stage of their professional life; the latter takes them when presumably their ideas of professional dignity are already formed. The power of precept has too often been exemplified to require emphasis here, but it is not too much to say that if some of our young graduates of to-day should go far amiss in matters of ethics, they might with propriety point to their Alma Mater as setting them the first example. If a student sees in the public prints a quack advertisement of his own college holding out inducements for patients, it will not require much of a stretch of his conscience to make him resort to the same methods.

The college has come to be an immense factor for good or evil in the profession, since nearly all our applicants for license to-day are graduates. The college moulds the mind of the future practitioner; it gives him his first impression of professional life; it mends or mars his tendency to a perfect professional career.

We do not wish to criticise in detail all the evils existing in our colleges, but most of them are traceable to the one idea of money-getting. It is an imposition on the profession and the people to conduct an institution of this kind for the prime purpose of emolument. In any but State institutions it is of course necessary to make revenue enough to procure the best advantages in appliances and instructors, but beyond this the conduct of the college should be governed with a view to the greatest amount of good rather than the greatest amount of gold.

A Code of Ethics to which all the colleges belonging to the National Association of Dental Faculties should subscribe would be in line with the recent advancement made by that body. We are not presumptuous enough to submit a Code for their consideration, believing the matter to be in better hands if left to the Association itself, but we earnestly recommend that at the coming meeting in August, a committee be appointed to draft a Code to be submitted to the main body. Then let them discuss it fully with the true interests of the profession in their minds, and when they arrive at a Code which in their wisdom seems the most suitable let them adopt it unanimously.

If this be done, and the Code afterwards be adhered to, we shall have less complaint from the profession, and the stigma "colleges for revenue only," will no longer hit the mark so closely as it does to-day.—Editorial, *Dental Review*.

SMALL-POX IN ITALY.

From Rome a correspondent writes: "The 'Consiglio Superiore di Sanità' has just concluded its first quarterly session under the Presidency of Professor James Moleschott, on the sanitary state of Italy. A striking feature of its report will be found to be not only the eminently satisfactory condition of the public health, but in particular the remarkable diminution of small-pox under the

new regulations. While in the January of 1889 there were 5,324 cases of the disease, in February 4,276, and in March 4,210, in the January of 1890 there were 2,317 cases, in February 1,241, and in March 1,618. This diminution of the disease, alike in virulence as in diffusion, is ascribed by the 'Consiglio' to the ever-increasing efficiency of the means of vaccination and revaccination in the communes—a concurrent cause being the facility with which vaccine lymph of the finest quality is provided by the State 'Istituto Vaccinogeno,' which in the first quarter of the present year distributed enough to vaccinate more than 145,000 persons. Other business before the Consiglio included suggestions to be submitted to the Minister of Grace and Justice for a more thorough support on the part of the legal authorities of the efforts of sanitary officers to bring contravenors of the Public Health Act under the penalties of the law. Meanwhile, the Consigli Provinciali are working admirably—a formidable epidemic of scarlatina in the Island of Elba having just been promptly cut short by the energetic action of the Medical Commission from Leghorn, headed by Drs. Chiappe and Della Strologo."—*Lancet.*

THE HYGIENIC TRAINING OF WOMEN.

Mr. Frederick Treves called attention to a perfectly new branch of the work undertaken by the Society with reference to physical education. Within the last few years an immense deal of attention had been directed to the matter of physical education. It had been pointed out that the education of the mind was well looked after while the education of the body was practically allowed to look after itself. Parents did not realize that proper physical education must be conducted on as precise and as careful scientific lines as the ordinary education of the mind. Parents were quite content to send their children to gymnasiums, and when they had done this, felt that their physical education was complete. They were unaware that there was no proper control over the teachers of gymnastics and calisthenics, a large number of whom were people totally unfit for their work. The particular object of the Society had, perhaps, rather more reference to children and to women than to men and boys. As a matter of fact, the latter class was admirably looked after. No one could find much to criticise in the athletic pursuits of our public schools. When they came to the London shopboy, they found his condition had been materially changed; he had taken to bicycling and other pursuits. When they came to schools, and especially to girls' schools, it must be confessed that the conditions were about as bad as they very well could be. They heard a good deal of the enormous advances of civilization during the last fifty or hundred years, and their marvellous improvement on the unfortunate savage, who had straight limbs, graceful carriage, and an absence of the ordinary aches and pains, and he was not disposed to be always taking tea or to be living in an atmosphere of tonics. People did not seem to be aware that by a judiciously supervised system of physical education, exercises and due attention to the development of the body it was possible to alter its proportions, to reduce redundances, and to develop deficient and feeble muscles. Motives of vanity and regard for the future physical development of their girls might so influence mothers, who were indifferent to higher considerations, to see that the physical education of girls was carried out, whether in families or in schools, under persons trained, skilled, and having the requisite knowledge to make such physical training in all respects useful and in no case injurious. Neither could be said of the very limited amount of physical training now given to girls. It was pointed out that the National Health Society's diplomas would be granted to such teachers of gymnastics, calisthenics, and physical exercises as had fulfilled the necessary curriculum and passed the required examinations. The Society hoped by the institution of this diploma to encourage development of physical education in this country; to render such training precise, effectual, and scientific; to protect the public, on the one hand, from incompetent teachers, and, on the other, to establish the position of such instructors as were fully qualified. It was intended, moreover, that the work of such teachers should be devoted and restricted to the one legitimate object set forth in the diploma, namely, physical training, and that they should not undertake the treatment of deformity or disease by "movement cures," "remedial exercises," massage, and the like. The diploma would certify that the candidate had passed an examination in the art and science of physical education, had fulfilled the curriculum required by the Society, and was fully qualified to act as an instructor of gymnastics, calisthenics, and physical exercises generally.—*British Medical Journal.*

A ROYAL SPECIALIST.

From Meran we hear that H. R. H. Duke Carl Theodore, of Bavaria, has resumed the gratuitous treatment of eye diseases among the Tyrolese poor, and that during the last four weeks he has carried to a successful issue 170 operations, of which 53 were for cataract. His Royal Highness is a duly qualified practitioner of the Munich school, whose curriculum he supplemented by the cliniques of Vienna and Berlin; and it is as no mere amateur, but as a surgeon whose skill goes hand-in hand with his enthusiasm for the healing art, that he attracts to his hospital at Meran not only the Austrian, but the Swiss and the Italian poor, who travel long distances to benefit by his humane tendance and successful treatment. *The Lancet.*

CHOLERA INTELLIGENCE.

It is officially stated that cholera has now for some months past been entirely absent from Persia. A similar statement has not, at any time during the past winter, been possible as regards Mesopotamia, and it now appears that the disease has recurred there, the centre of the prevalence being Mosul on the Tigris.

TENTH INTERNATIONAL MEDICAL CONGRESS.

Dr. Newton M. Shaffer, Chairman Com. Orthopædic Section, N. Y. Academy of Medicine, writes us that a special Section of Orthopædic Surgery has been formed by the committee of organization of the Berlin Congress, and that members of the profession interested in orthopædic surgery are requested to be present at the Congress and to become members of the Section.

PRACTICAL NOTES.

EFFECT OF DRUGS ON INTESTINAL ABSORPTION.

Dr. S. Leubuscher, said that, according to recent experiments, intestinal absorption was no longer looked upon as a simple physical process, but as a function of the living epithelial cell of the intestinal wall. Thence everything which influenced the living activity of the cell must also exert an influence on absorption. These effects might either be due to an influence on the protoplasm of the cell or to disturbances of the circulation, or to an influence on the nervous system. As to the first mentioned point, the experiments were conducted in such a way that a strong solution of an inorganic acid was injected into a ligatured intestinal coil in a living animal, and, after sufficient cleaning, a certain quantity of a solution of grape sugar was poured into the same coil. The absorption of the grape sugar was constantly diminished. With regard to the second point, the arteries leading to a ligatured coil in the mesentery were ligatured in one case, and in another the veins were ligatured. On one occasion anæmia and in the other instance hyperæmia were thus produced. In both cases of disturbance of circulation, particularly the last form, the absorption of grape sugar and that of a solution of iodide of potassium was considerably interfered with. As to the third point, the experiments were not yet concluded. After those preliminary experiments it seemed probable that a number of drugs would also exert an influence on intestinal absorption. To test the intensity of absorption, grape sugar and solutions of iodide of potassium were used; as drugs, quinine, opium, morphine, alcohol, glycerine, besides weak solutions of common salt and the water of the Mühlbrunn of Carlsbad, were used. Two coils of the same length were ligatured in dogs and cats. Into one of these an aqueous solution of iodide of potassium or grape sugar was injected, and into the other the same substance, with the addition of a drug. There was a difference in the intensity of absorption, pointing to the influence of the drug. The experiments were continued on dogs with intestinal fistulæ produced by the Thiry-Pela method. It was evident from these experiments that quinine, opium and morphine diminished absorption even in feeble concentrations. Morphine had the same effect even when it did not come into direct contact with the mucous membrane, but was only applied subcutaneously. Alcohol, in slight concentrations (from ½ to 2 per cent.), increased the intensity of absorption; in large quantities it diminished it more and more. Glycerine was indifferent; a slight addition of common salt increased absorption. Mühlbrunn of Carlsbad had no effect. As to the iodide of potassium, the experiments carried out on man showed that the diminution through the saliva in alcoholic solutions of a strong concentration was impaired. When men drank iodide of potassium in aqueous alcoholic solution, or in glycerine solution, or in Mühlbrunn of Carlsbad, the quantity of iodine secreted through the urine was, on the average, increased. Milk diminished this secretion.—*British Medical Journal.*

CAUSTIC PASTE FOR THE REMOVAL OF EPITHELIOMA.

At a recent meeting of the New York Dermatological Society (*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1890) Dr. Lewis presented a case which had been satisfactorily treated by means of the following elaborate paste, which was first described by Dr. Bougard, of Brussels:

℞ Wheat flour	Parts,	60
Starch	Parts,	60
Arsenic	Part,	1
Cinnabar	Parts,	5
Ammonium chloride	Parts,	5
Mercuric chloride	Part,	0.5
Saturated sol. of zinc chlor.	Parts,	2.5

The first six ingredients are separately ground to a fine powder and mixed in a mortar. The zinc chloride solution is then slowly added while the contents are rapidly stirred. The soft mass is then poured into an eathern pot, and, if covered, will keep in good condition for months.

In the case reported the outer horny covering of the epithelioma was first removed with liquor potassa; the paste was then applied and allowed to remain for thirty hours, after which poultices were applied for three days. At the end of that time the slough came away, leaving a healthy granulating surface.—*Medical News.*

SALOL IN THE GASTRO-INTESTINAL DERANGEMENTS OF CHILDREN.

Salol is an easily administered, safe drug in the first stage of gastro-enteritis in children, and in more chronic forms of entero-colitis, accompanied by slimy, bad-smelling evacuations. In the acute condition it is necessary to keep the stomach at rest and administer two or three doses of salol within five or six hours. For the more chronic state of catarrh it is best given in somewhat larger doses before meals. In frequent serous discharges and in colitis the salol does not produce the same good results as in the cases mentioned above, and its effect is uncertain, not being so rapid or so sure as an opiate.

In dysenteric disorders it cannot be relied on. It seems, then, that salol acts best in morbid conditions due to fermentation and decomposition in the stomach and upper bowel, and that it diminishes in power as it passes through the large intestine.—Walter Lester Carr, M.D., in *Arch. of Ped.*

NECROLOGY.

Joseph P. Ross, M.D.,

Dr. Joseph P. Ross, the well-known physician of Chicago, died at his residence, 428 Washington Boulevard, on Sunday, June 15. He had been ailing for the last two years, and finally succumbed to softening of the brain.

The *Chicago Tribune*, in an eloquent tribute to his memory, says:

Dr. Joseph Presley Ross was a physician who, previous to his retirement from actual practice some six years ago, was one of the most eminent in the country in the treatment of the throat and lungs. His chair in Rush Medical College was that of "Clinical Medicine and Diseases of the Chest," and this position he retained as long as he remained in the practice of his profession, after which he became an emeritus professor. His chief memorial will be the "Ross Wing" of the Presbyterian Hospital, an institution for which he perfected the plans and obtained many substantial donations, notably $10,000 from Tuthill King, his father-in-law.

He was born January 7, 1828, on a farm in Clark County, Ohio, near what is now the manufacturing city of Springfield. The stock from which he was descended was noted among the Western pioneers for bravery and heroism in the Indian warfare. Before the Revolutionary War a Scotchman named Ross settled on the Potomac and was killed by the Indians. One of his sons had exactly the same experience as Capt. John Smith, but in this case he married the chieftain's daughter, who played the part of Pocahontas.

The great grandfather of Dr. Ross fell into the hands of the Indians, and was ransomed by a French trader after the fire had been lighted which was to burn him alive. William Ross, the father of Dr. Ross, removed to Kentucky, in 1788, and in 1797 to Ohio, first near Cincinnati, and then, four years before Ohio became a State, removed to Clark County. His son Elijah married Mary Laws Houston, of Delaware, O., and of them was born Dr. J. P. Ross and five other sons. On a farm near Piqua, O., he spent his boyhood days, and went to school in the old district school until he was 19 years old, farming between whiles. But agriculture did not suit him, and he started out in business for himself, first in a woolen mill at Piqua, where he cleared a profit of $2,000 in two years, quite a considerable sum of money in those days.

He used this to educate himself for the medical profession. After a scientific course in the academy at Piqua, he read medicine under the preceptorship of Dr. G. Volney Dorsey, one of the most eminent physicians of the Buckeye State, and afterwards State Treasurer. Dr. Ross's medical education was completed at Starling Medical College, at Columbus, and the Ohio Medical College of Cincinnati.

For a year after his graduation he practiced at St. Mary's, Ohio, but in 1853 he decided to come to Chicago. He formed a partnership with Dr. Lucien P. Cheney, which lasted several years, during which he built up a large practice and was made physician to the orphan asylum, a position which he held for many years. He was also the first physician to the State Reform School, now at Pontiac, but at that time in Chicago.

As early as 1858 he was interested in hospital work in Chicago. It was then that he, with others, leased what was known as the old City Hospital of Chicago, which he conducted until 1866, when the Cook County Hospital, which had been used during the war as a Government military hospital, was again taken charge of by the county authorities. At that time he became a member of the Board of County Commissioners solely that he might build up this institution, and his services in this connection were hardly less conspicuous than in the inception and management of the Presbyterian Hospital enterprise.

He devoted an immense amount of his time as Chairman of the Hospital Committee, and to him is due the systematizing of the rules of government of this institution and the present spacious grounds. As long as he remained in practice he was one of the attending physicians of this hospital.

His connection with Rush Medical College began in 1868 and continued through its most disastrous days after the great fire, when the handsome building was left a smoldering ruin just as the annual course of lectures had begun.

A busy man, he was not too busy to be religious. Since ever the Jefferson Park Presbyterian Church was, he has been an elder. He did not neglect the cause of education either. He was a trustee of Lake Forest University, a member of the directory of McCormick Theological Seminary, and an active participant in the work of the American Medical Missionary Society.

The degree of M. A. was conferred on him by Kenyon College, and he held memberships in most of the leading medical societies in the country.

One of the projects of his later life, which the disease which left him a broken and helpless invalid drove him to abandon, was the building a great sanitarium on Lookout Mountain, which he regarded as one of the most suitable places for such an institution to be found in the country.

Joseph W. Howe, M.D.

Dr. Joseph W. Howe, of New York, a medical writer of some prominence, died several hours after an apopleptic seizure on June 7, while on board the Umbria, *en route* for Queenstown. He was born September 30, 1843, in the Province of

New Brunswick, Canada, and had some training as a printer in the *Colonial Times Office*, which belonged to his father. He subsequently became a reporter, and acted in that capacity during the sessions of the Colonial Parliament in 1861–1862. A year afterwards he studied in the City of New York, and in 1866 was graduated from the University Medical College. Two years after a service in Bellevue Hospital, he was appointed a physician to the out-door department, and a clinical professor of surgery. Besides this he was visiting surgeon of the St. Francis Hospital and President of its Medical Board. He was a widower, and leaves an only child, a daughter 12 years old, who was with him on board the steamer.

BOOK REVIEWS.

CLEVENGER ON SPINAL CONCUSSION. By S. V. CLEVENGER, M.D., of Chicago, Ill. Philadelphia: F. A. Davis. 1890. Price $2.50.

This book is written for both lawyer and physician, with the purpose of bringing up to date the recent additions to our knowledge of the subject of spinal concussion, for which the name Erichson's disease is very properly advocated. The first five chapters are given up to the views of Erichson, who is extolled; Page, who is uniformly ridiculed; Oppenheim, who is applauded, and very many others. The translation of Oppenheim's brochure which forms Chapter V is a very valuable feature, and alone worth the price of the volume. The detailed account of a multitude of cases follows, taken from various writers, and includes twenty observations by the author. Symptoms, diagnosis and differential diagnosis are severally accorded a systematic and valuable chapter. Regarding pathology the author insists upon the important part taken by the sympathetic nervous system, to impairment of which he attributes mainly the etiology of the condition, and makes out a very attractive theory. Unfortunately his argument is not and probably cannot, in the nature of things, be supported by pathological anatomy. A long chapter on electro-diagnosis is hardly called for in such a work, for even to quote the writer (Symptoms, p. 213), "The faradic and galvanic responses are generally quantitatively but not qualitatively lessened." The style in which the work is written is clear and forcible, but at times a lack of that judicial dignity and fairness which such a subject and all medical work demands, is manifest, and the frequent aspersions upon the intelligence of the American medical profession are as unnecessary as they are overdrawn, and in bad taste. For instance, p. 25, he says, "It is sad to reflect, however, that the majority of medical men in our country have never seen a human spinal cord and would not recognize one if they did see it." Again, p. 128, when speaking of medical schools he asserts that "in our medical chairs we find a preponderance of scrambling medical politicians, mediocrity, and downright ignorance, the usual medical lecture consisting of boasts, solecisms, religious platitudes and medical slang."

As a compilation of recent opinions and observations in the indicated field the volume has a real value, but the views and estimates of the author will bear a grain of salt.

MISCELLANY.

LETTERS RECEIVED.

Dr. W. S. Pickens, Indianapolis, Ind.; Battle & Co., St. Louis, Mo.; Dr. Chalante, Liége, Belgique; A. T. Jones, Nashville, Tenn.; Drs. Hobson and Appleby, Bristow, Ia.; J. W. Graham, Denver, Col.; Dr. G. W. Moody, Shelbyville, Tenn.; Dr. Y. A. McSwain, Paris, Tenn.; Dr. G. W. Fockler, Delavan, Ill.; Dr. R. J. Dunglison, Philadelphia; Dr. Wm. L. Musser, Cincinnati; Dr. J. R. Haggard, Lincoln, Neb.; Dr. S. E. Hampton, Milton, Ky.; Dr. T. C. Peterson, Warrior's Mark, Pa.; Cadogan & Hatcher, Quincy, Ill.; Dr. S. A. Reynolds, Sago, Va.; Dr. A. M. Miller, Bird-in-Hand, Pa.; Dr. J. F. Chmelicek, Dr. A. L. Carroll, I. Haldenstein, New York; Western Pennsylvania Medical College, Pittsburgh, Pa.; Dr. T. E. Murrell, Little Rock, Ark.; Dr. J. F. Blair, Linwood, O.; Dr. H. G. Buckingham, Clayton, N. J.; Dr. W. G. Young, Mackinaw City, Mich.; Dr. Chas. Mitchell, Nashville, Tenn.; Dr. W. S. Brown, Stoneham, Mass.; Dr. H. T. Rennolds, Baltimore, Md.; Stollwerk & Bros., J. H. Bates, Lyon Mfg. Co., New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U.S. Army, from June 14, 1890, to June 20, 1890.

Capt. Aaron H. Appel, Asst. Surgeon U. S. A. (Ft. D. A. Russell, Wyo.), is granted leave of absence for one month, to take effect on or about June 15, 1890, with permission to apply through Hdqrs. Div. of the Missouri for an extension of one month. Par. 4, S. O. 42, Hdqrs. Dept. of the Platte, Omaha, Neb., June 10, 1890.

Capt. William O. Owen, Jr., Asst. Surgeon, is granted leave of absence for six months, to take effect when, in the opinion of his Dept. commander, his services can be spared. By direction of the Secretary of War. Par. 12, S. O. 139, A. G. O., June 14, 1890.

By direction of the Secretary of War, First Lieut. Eugene L. Swift, Asst. Surgeon, is relieved from duty at Ft. Spokane, Wash., and will report in person to the commanding officer, Ft. McDowell, Ariz., for duty at that station, relieving Capt. Marlborough C. Wyeth, Asst. Surgeon, who, on being thus relieved, will proceed to Ft. McIntosh, Tex., and report in person to the commanding officer thereof for duty at that station. The officers named will also report by letter, upon their arrival at their new stations, to their respective Dept. commanders. Par. 10, S. O. 140, A. G. O., June 16, 1890.

Capt. Charles B. Byrne, Asst. Surgeon, is granted leave of absence for two months, to take effect July 1, 1890. By direction of the Secretary of War. Par. 13, S. O. 141, A. G. O., Hdqrs. of the Army, June 17, 1890.

Capt. William W. Gray, Asst. Surgeon, is granted leave of absence for four months, to take effect upon the final abandonment of Ft. Maginnis, Mont. By direction of the Secretary of War. Par. 14, S. O. 141, A. G. O., Hdqrs. of the Army, June 17, 1890.

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